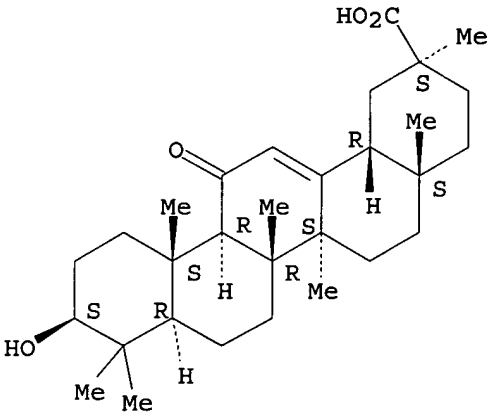
L2 ANSWER 1 OF 1 REGISTRY COPYRIGHT 2006 ACS on STN
RN 471-53-4 REGISTRY
ED Entered STN: 16 Nov 1984
CN Olean-12-en-29-oic acid, 3-hydroxy-11-oxo-, (3β,20β)- (9CI) (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN Olean-12-en-30-oic acid, 3β-hydroxy-11-oxo- (8CI)
CN Uralenic acid (7CI)
OTHER NAMES:
CN α-Glycyrrhetinic acid
CN 18β-Glycyrrhetic acid
CN 18β-Glycyrrhetinic acid
CN Arthrodont
CN Biosone
CN Enoxolone
CN Glycyrrhetic acid
CN Glycyrrhetin
CN **Glycyrrhetinic acid**
CN GM 1658
CN NSC 35347
CN PO 12
CN STX 352
CN Subglycyrrhelinic acid
FS STEREOSEARCH
DR 8055-71-8, 15301-63-0, 107420-91-7, 202522-39-2, 299198-00-8
MF C30 H46 O4
CI COM
LC STN Files: ADISNEWS, AGRICOLA, ANABSTR, BEILSTEIN*, BIOSIS, BIOTECHNO, CA, CAOLD, CAPLUS, CASREACT, CBNB, CHEMCATS, CHEMLIST, CIN, CSCHEM, DDFU, DRUGU, EMBASE, IFICDB, IFIPAT, IFIUDB, IPA, MEDLINE, MRCK*, NAPRALERT, NIOSHTIC, PROMT, PS, RTECS*, SPECINFO, TOXCENTER, USAN, USPAT2, USPATFULL
(*File contains numerically searchable property data)
Other Sources: EINECS**, NDSL**, TSCA**, WHO
(**Enter CHEMLIST File for up-to-date regulatory information)

Absolute stereochemistry.

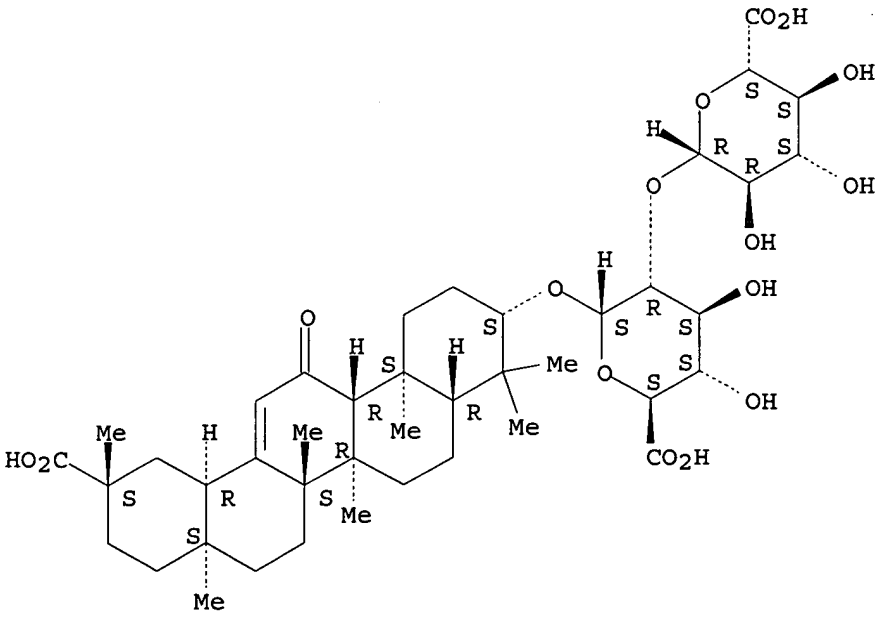


PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

1543 REFERENCES IN FILE CA (1907 TO DATE)
133 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
1546 REFERENCES IN FILE CAPLUS (1907 TO DATE)
2 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

L1 ANSWER 1 OF 1 REGISTRY COPYRIGHT 2006 ACS on STN
RN 1405-86-3 REGISTRY
ED Entered STN: 16 Nov 1984
CN α-D-Glucopyranosiduronic acid, (3β,20β)-20-carboxy-11-oxo-30-norolean-12-en-3-yl 2-O-β-D-glucopyranuronosyl- (9CI) (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN 30-Noroleanane, α-D-glucopyranosiduronic acid deriv.
CN **Glycyrrhizic acid (8CI)**
OTHER NAMES:
CN β-Glycyrrhizin
CN 18β-Glycyrrhizic acid
CN Glycyron
CN Glycyrrhetinic acid glycoside
CN Glycyrrhizin
CN Glycyrrhizinic acid
CN NSC 167409
CN NSC 234419
CN Potenlini
FS STEREOSEARCH
DR 18933-02-3, 139014-59-8, 70055-50-4, 79165-07-4, 31261-47-9, 47897-45-0, 47897-48-3
MF C42 H62 O16
CI COM
LC STN Files: ADISINSIGHT, ADISNEWS, AGRICOLA, ANABSTR, BEILSTEIN*, BIOSIS, BIOTECHNO, CA, CABA, CAOLD, CAPLUS, CASREACT, CBNB, CHEMCATS, CHEMLIST, CIN, CSCHEM, DDFU, DETHERM*, DRUGU, EMBASE, HSDB*, IFICDB, IFIPAT, IFIUDB, IMSCOSEARCH, IPA, MEDLINE, MRCK*, NAPRALERT, PROMT, PROUSDDR, RTECS*, TOXCENTER, USAN, USPAT2, USPATFULL, VETU
(*File contains numerically searchable property data)
Other Sources: DSL**, EINECS**, TSCA**
(**Enter CHEMLIST File for up-to-date regulatory information)

Absolute stereochemistry.



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

2520 REFERENCES IN FILE CA (1907 TO DATE)
153 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
2526 REFERENCES IN FILE CAPLUS (1907 TO DATE)
4 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

L2 ANSWER 42 OF 100 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1996:80532 CAPLUS
DOCUMENT NUMBER: 124:219390
TITLE: Inhibitory effects of lantadenes and related **triterpenoids** on **Epstein-Barr** virus activation
AUTHOR(S): Inada, Akira; Nakanishi, Tsutomu; Tokuda, Harukuni; Nishino, Hoyoku; Iwashima, Akio; Sharma, Om P.
CORPORATE SOURCE: Fac. Pharmacetuical Sci., Setsunan Univ., Osaka, 573-01, Japan
SOURCE: Planta Medica (1995), 61(6), 558-9
CODEN: PLMEAA; ISSN: 0032-0943
PUBLISHER: Thieme
DOCUMENT TYPE: Journal
LANGUAGE: English
AB To search for possible inhibitors of tumor promotion, the inhibitory effects of lantadenes and related **triterpenoids** from Lantana camara L. (Verbenaceae) on **Epstein-Barr** virus activation in Raja cells were tested. The substitutions on the carboxylic acid through an ester bond might play an important role in the activity.

L2 ANSWER 46 OF 100 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1995:441845 CAPLUS
DOCUMENT NUMBER: 122:281523
TITLE: Inhibitory effects of cucurbitane **triterpenoids** on **Epstein-Barr** virus activation and two-stage carcinogenesis of skin tumor. II
AUTHOR(S): Konoshima, Takao; Takasaki, Midori; Kozuka, Mutsuo; Nagao, Tsuneatsu; Okabe, Hikaru; Irino, Nobuto; Nakasumi, Tetsuo; Tokuda, Harukuni; Nishino, Hoyoku
CORPORATE SOURCE: Kyoto Pharm. Univ., Kyoto, 607, Japan
SOURCE: Biological & Pharmaceutical Bulletin (1995), 18(2), 284-7
CODEN: BPBLEO; ISSN: 0918-6158
PUBLISHER: Pharmaceutical Society of Japan
DOCUMENT TYPE: Journal
LANGUAGE: English
AB To search for possible anti-tumor-promoters, we carried out a primary screening of twenty-four 29-nor-cucurbitacin glucosides isolated from the roots of Cayaponia tayuya (Cucurbitaceae) using an in vitro synergistic assay system. Of these glucosides, cayaponosides B (5), B3 (7), D (8), D3b (22) and C2 (23) exhibited significant inhibitory effects on Epstein-Barr virus (EBV) activation induced by the tumor promoter, 12-O-tetradecanoylphorbol-13-acetate (TPA). Furthermore, 5 and 23 exhibited remarkable anti-tumor-promoting effects on mouse skin tumor promotion in an in vivo two-stage carcinogenesis test.

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     (FILE 'HOME' ENTERED AT 13:08:49 ON 19 APR 2006)

     FILE 'CAPLUS, MEDLINE' ENTERED AT 13:09:00 ON 19 APR 2006
L1             6 S GLYCYRRHIZIN (P) EPSTEIN BARR VIR?
L2             6 S GLYCYRRHIZIN (P) EPSTEIN BARR
L3             4 S GLYCYRRHIZIC ACID (P) EPSTEIN BARR
L4             5 S GLYCYRRHETINIC ACID (P) EPSTEIN BARR
L5            12 S TERPENOID? (P) EPSTEIN BARR
L6           100 S ?TERPENOID? (P) EPSTEIN BARR
L7           100 S ?TERPENOID? (P) EPSTEIN BARR VIRUS
L8             3 S L7 AND ADMINIST?
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L1 ANSWER 3 OF 6 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2001:863496 CAPLUS
DOCUMENT NUMBER: 135:366719
TITLE: Composition for and method of treatment of Kaposi's sarcoma and Kaposi's sarcoma-associated herpesvirus infection using triterpenoids
INVENTOR(S): Flore, Ornella
PATENT ASSIGNEE(S): USA
SOURCE: U.S., 16 pp.
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 6323183	B1	20011127	US 1999-324473	19990602
US 2002091158	A1	20020711	US 2001-976838	20011015
PRIORITY APPLN. INFO.:			US 1999-324473	A3 19990602

AB Methods and compns. for treating Kaposi's sarcoma and **Epstein Barr virus** using a a therapeutic derivative of a triterpenoid acid and derivs. thereof are disclosed. The present invention relates to the use of a triterpenoid preferably a glycyrrhizic acid (**glycyrrhizin**) to inhibit the transcription of viral latent genes and the consequential viral latent cycle at doses that do not affect the uninfected cells. Using glycyrrhizic acid and derivs., the Kaposi's sarcoma-associated herpesvirus (KSHV) infected cells are completely killed six days after treatment.

REFERENCE COUNT: 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L1 ANSWER 1 OF 6 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2003:289081 CAPLUS
DOCUMENT NUMBER: 139:301037
TITLE: Anti-carcinogenic activities of natural sweeteners
AUTHOR(S): Konoshima, Takao; Takasaki, Midori
CORPORATE SOURCE: Lab. Pharmaceutical Sci. Natural Resources, Kyoto Pharmaceutical Univ., Tokyo, 607-8414, Japan
SOURCE: Foods & Food Ingredients Journal of Japan (2003), 208(3), 184-191
CODEN: FFIJER; ISSN: 0919-9772
PUBLISHER: FFI Janaru
DOCUMENT TYPE: Journal; General Review
LANGUAGE: Japanese
AB A review. Many kinds of antitumor agents and their related compds. have been isolated from natural resources, and the medicinal sciences have made rapid progress in the treatment of carcinogenesis, however, cancer currently remains a tragic disease and is one of the major causes of death worldwide. Furthermore, perfectly effective antitumor agents free from side effects have not been found yet, and these side effects of antitumor agents are serious problems in the treatment of cancer. Therefore, the advancement of chemoprevention is important, as well as the development of cancer treatment. To search for possible cancer-chemopreventive agents from natural sources, several natural sweeteners were screened by the in vitro assay indicated by the inhibitory effects of **Epstein-Barr virus** early antigen (EBV-EA) induction. Of active compds. that showed the remarkable inhibitory effects on the EBV-EA induction, stevioside, from the leaves of Stevia rebaudiana, and mogroside V, from the fruits of Momordica grosvenori, exhibited significant inhibitory effects on the two-stage mouse skin carcinogenesis in vivo induced by 7,12-dimethylbenzy[a]anthracene (DMBA) and 12-O-tetradecanoylphorbol-13-acetate (TPA). The inhibitory effects of these sweeteners are stronger than that of **glycyrrhizin**, which had been known as an anti-tumor-promoter in chemical carcinogenesis. Furthermore, stevioside also inhibited mouse skin carcinogenesis initiated by peroxynitrite (ONOO). These results suggested that stevioside and mogroside V, which have been used as an alternative sweetener to sucrose might be also valuable as chemopreventive agents for chemical carcinogenesis.

L1 ANSWER 2 OF 6 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2002:640085 CAPLUS
DOCUMENT NUMBER: 137:309776
TITLE: Cancer-chemopreventive effects of natural sweeteners and related compounds
AUTHOR(S): Konoshima, Takao; Takasaki, Midori
CORPORATE SOURCE: Kyoto Pharmaceutical University, Kyoto, 607-8414, Japan
SOURCE: Pure and Applied Chemistry (2002), 74(7), 1309-1316
CODEN: PACHAS; ISSN: 0033-4545
PUBLISHER: International Union of Pure and Applied Chemistry
DOCUMENT TYPE: Journal
LANGUAGE: English
AB To search for possible cancer-chemopreventive agents from natural resources, several natural sweeteners were screened by the in vitro assay indicated by the inhibitory effects of **Epstein-Barr virus** early antigen (EBV-EA) induction. Of active compds. that showed the remarkable inhibitory effects on the EBV-EA induction, stevioside, from the leaves of Stevia rebaudiana, and mogroside V, from the fruits of Momordica grosvenori, exhibited significant inhibitory effects on the two-stage mouse skin carcinogenesis in vivo induced by 7,12-dimethylbenz[a]anthracene (DMBA) and 12-O-tetradecanoylphorbol-13-acetate (TPA). The inhibitory effect of stevioside is stronger than that of **glycyrrhizin**, which had been known as an antitumor-promoter in chemical carcinogenesis. Furthermore, stevioside also inhibited mouse

skin carcinogenesis initiated by peroxynitrite. These results suggest that stevioside and mogroside V might be valuable as chemopreventive agents for chemical carcinogenesis.

REFERENCE COUNT: 20 THERE ARE 20 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

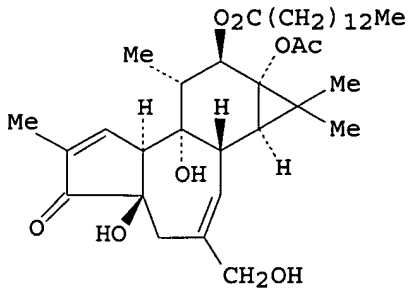
L1 ANSWER 3 OF 6 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2001:863496 CAPLUS
DOCUMENT NUMBER: 135:366719
TITLE: Composition for and method of treatment of Kaposi's sarcoma and Kaposi's sarcoma-associated herpesvirus infection using triterpenoids
INVENTOR(S): Flore, Ornella
PATENT ASSIGNEE(S): USA
SOURCE: U.S., 16 pp.
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 6323183	B1	20011127	US 1999-324473	19990602
US 2002091158	A1	20020711	US 2001-976838	20011015
PRIORITY APPLN. INFO.:			US 1999-324473 A3	19990602

AB Methods and compns. for treating Kaposi's sarcoma and **Epstein Barr virus** using a a therapeutic derivative of a triterpenoid acid and derivs. thereof are disclosed. The present invention relates to the use of a triterpenoid preferably a glycyrrhizic acid (**glycyrrhizin**) to inhibit the transcription of viral latent genes and the consequential viral latent cycle at doses that do not affect the uninfected cells. Using glycyrrhizic acid and derivs., the Kaposi's sarcoma-associated herpesvirus (KSHV) infected cells are completely killed six days after treatment.

REFERENCE COUNT: 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L1 ANSWER 4 OF 6 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1983:401608 CAPLUS
DOCUMENT NUMBER: 99:1608
TITLE: Inhibition of 12-O-tetradecanoylphorbol-13-acetate-induced induction in Epstein-Barr virus early antigen in Raji cells
AUTHOR(S): Okamoto, Hitoshi; Yoshida, Daisuke; Mizusaki, Shigenobu
CORPORATE SOURCE: Cent. Res. Inst., Japan Tob. and Salt Public Corp., Yokohama, 227, Japan
SOURCE: Cancer Letters (Shannon, Ireland) (1983), 19(1), 47-53
CODEN: CALEDQ; ISSN: 0304-3835
DOCUMENT TYPE: Journal
LANGUAGE: English
GI



I

AB Retinol [68-26-8], 5 flavonoids, 3 steroids, and 7 sweetening agents were studied for their effects on TPA (I) [16561-29-8]-induced early antigen (EA) of **Epstein-Barr virus** (EBV) in Raji cells. Concomitant treatment of Raji cells with TPA and retinol inhibited EA induction. Among flavonoids, quercetin [117-39-5] resulted in effective inhibition of EA induction by TPA and α-naphthoflavone [604-59-1] showed a weakly inhibitory effect. None of the other flavonoids such as rutin [153-18-4], catechin [154-23-4] and β-naphthoflavone [6051-87-2] affected the induction of EBV-EA by TPA. β-Estradiol [50-28-2] obviously inhibited EBV-EA induction by TPA, but hydrocortisone [50-23-7] did not show any inhibitory effect. Glycyrrhetinic acid, steviol, phyllodulcin and perrillartine also strongly inhibited EBV-EA induction. **Glycyrrhizin** [1405-86-3] and stevioside [57817-89-7], glycosides of glycyrrhetinic acid [471-53-4] and steviol [471-80-7], did not inhibit the induction of EBV-EA by TPA. Some of these inhibitors may be effective in inhibiting the in vivo tumor promotion by TPA.

L1 ANSWER 5 OF 6 MEDLINE on STN
ACCESSION NUMBER: 93381131 MEDLINE
DOCUMENT NUMBER: PubMed ID: 8370836
TITLE: Repeat MRI in acute rhabdomyolysis: correlation with clinicopathological findings.
AUTHOR: Shintani S; Shiigai T
CORPORATE SOURCE: Department of Neurology, Toride Kyodo General Hospital, Ibaraki, Japan.
SOURCE: Journal of computer assisted tomography, (1993 Sep-Oct) Vol. 17, No. 5, pp. 786-91.
Journal code: 7703942. ISSN: 0363-8715.
PUB. COUNTRY: United States
DOCUMENT TYPE: (CASE REPORTS)
Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199310
ENTRY DATE: Entered STN: 19931029
Last Updated on STN: 19931029
Entered Medline: 19931012

AB OBJECTIVE: Four cases of acute rhabdomyolysis are presented and the correlation between clinicopathological and MR findings is discussed. MATERIALS AND METHODS: The cases include carnitine palmitoyltransferase I deficiency presenting as compartment syndrome, acute polymyositis, acute myositis associated with **Epstein-Barr virus** infection, and **glycyrrhizin**- and diuretic-induced hypokalemic myopathy. RESULTS: The T2-weighted MR images revealed high intensity lesions in the affected muscle groups. The lesions seen on MR correlated precisely with the symptoms and neurological deficits of the patients. Repeat MR studies showed that the high intensity lesions seen on T2-weighted MR images resolved in parallel with the clinical course. CONCLUSION: This reversibility of the MR findings suggests that the high intensity lesions do not reflect permanent myopathic changes, but probably

represent transient edema in the acute phase of rhabdomyolysis.

L1 ANSWER 6 OF 6 MEDLINE on STN
ACCESSION NUMBER: 83206473 MEDLINE
DOCUMENT NUMBER: PubMed ID: 6850568
TITLE: Inhibition of 12-O-tetradecanoylphorbol-13-acetate-induced induction in Epstein-Barr virus early antigen in Raji cells.
AUTHOR: Okamoto H; Yoshida D; Mizusaki S
SOURCE: Cancer letters, (1983 May) Vol. 19, No. 1, pp. 47-53. Journal code: 7600053. ISSN: 0304-3835.
PUB. COUNTRY: Netherlands
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 198307
ENTRY DATE: Entered STN: 19900319
Last Updated on STN: 19990129
Entered Medline: 19830729

AB Retinol, 5 flavonoids, 3 steroids and 7 sweetening agents were studied for their effects on 12-O-tetradecanoylphorbol-13-acetate (TPA)-induced early antigen (EA) of **Epstein-Barr virus** (EBV) in Raji cells. Concomitant treatment of Raji cells with TPA and retinol showed inhibition of EA induction. Among flavonoids, quercetin resulted in effective inhibition of EA induction by TPA and alpha-naphthoflavone showed the weakly inhibitory effect. None of the other flavonoids such as rutin, catechin and beta-naphthoflavone affected the induction of EBV-EA by TPA. beta-Estradiol obviously inhibited EBV-EA induction by TPA, but hydrocortisone did not show any inhibitory effect on it. Glycyrrhetinic acid, steviol, phyllodulcin and perrillartine also showed the remarkable inhibition of EBV-EA induction. On the other hand, **glycyrrhizin** and stevioside, glycosides of glycyrrhetinic acid and steviol, did not inhibit the induction of EBV-EA by TPA. Some of the inhibitors reported here may be effective on the inhibition of the in vivo tumor promotion by TPA.

L3 ANSWER 1 OF 4 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2003:499243 CAPLUS
DOCUMENT NUMBER: 139:374307
TITLE: Mechanism of action of **glycyrrhizic acid** in inhibition of **Epstein-Barr** virus replication in vitro
AUTHOR(S): Lin, Jung-Chung
CORPORATE SOURCE: College of Medicine, Department of Microbiology, Tzu Chi University, Hualien, 970, Taiwan
SOURCE: Antiviral Research (2003), 59(1), 41-47
CODEN: ARSRDR; ISSN: 0166-3542
PUBLISHER: Elsevier Science B.V.
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The authors report here that glycyrrhizic acid (GL), a component of licorice root (Glycyrrhiza radix), is active against EBV replication in superinfected Raji cells in a dose-dependent fashion. The IC50 values for viral inhibition and cell growth were 0.04 and 4.8 mM, resp. The selectivity index (ratio of IC50 for cell growth to IC50 for viral DNA synthesis) was 120. Time of addition expts. suggested that GL interferes with an early step of the EBV replication cycle (possibly penetration). GL had no effect on viral adsorption nor did it inactivate EBV particles. Thus, GL represents a new class of anti-EBV compds. with a mode of action different from that of the nucleoside analogs that inhibit viral DNA polymerase.
REFERENCE COUNT: 33 THERE ARE 33 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 2 OF 4 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2001:863496 CAPLUS
DOCUMENT NUMBER: 135:366719
TITLE: Composition for and method of treatment of Kaposi's sarcoma and Kaposi's sarcoma-associated herpesvirus infection using triterpenoids
INVENTOR(S): Flore, Ornella
PATENT ASSIGNEE(S): USA
SOURCE: U.S., 16 pp.
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 6323183	B1	20011127	US 1999-324473	19990602
US 2002091158	A1	20020711	US 2001-976838	20011015

PRIORITY APPLN. INFO.: US 1999-324473 A3 19990602
AB Methods and compns. for treating Kaposi's sarcoma and **Epstein Barr** virus using a a therapeutic derivative of a triterpenoid acid and derivs. thereof are disclosed. The present invention relates to the use of a triterpenoid preferably a **glycyrrhizic acid** (glycyrrhizin) to inhibit the transcription of viral latent genes and the consequential viral latent cycle at doses that do not affect the uninfected cells. Using **glycyrrhizic acid** and derivs., the Kaposi's sarcoma-associated herpesvirus (KSHV) infected cells are completely killed six days after treatment.
REFERENCE COUNT: 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 3 OF 4 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1998:763541 CAPLUS
DOCUMENT NUMBER: 130:172862

TITLE: Epstein-Barr virus DNA polymerase inhibitors from Chinese herbs: use of preliminary screening, physicochemical properties and taxonomy for new lead compounds generation

AUTHOR(S): Lien, Eric J.; Bui, Huynh-Hoa; Ren, Shijun; Liu, Karin C. S. Chen; Lin, Mei-Tsu; Chiou, Juo-Farn

CORPORATE SOURCE: Department of Pharmaceutical Sciences, School of Pharmacy, University of Southern California, Los Angeles, CA, 90033, USA

SOURCE: Chinese Pharmaceutical Journal (Taipei) (1998), 50(4), 233-247
CODEN: CPHJEP; ISSN: 1016-1015

PUBLISHER: Pharmaceutical Society of Republic of China

DOCUMENT TYPE: Journal

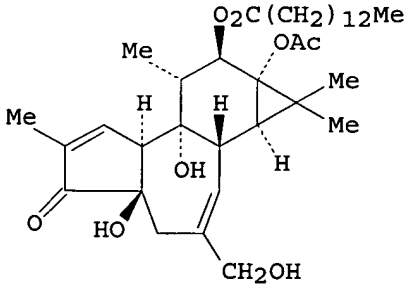
LANGUAGE: English

AB A paradigm of combining preliminary screening data, SAR, functional group and taxonomical analyses has been proposed for new lead compds. generation. Based on the screening data of 38 natural products, a quaternary ammonium derivative (coptisine chloride), a sesquiterpene with an α,β-unsatd. lactone function and an isoflavonoid (daidzein) have been found to be most active. Based on the analyses of overall structures, physicochem. properties and taxonomical relationships, 47 related compds. and six families of plants are suggested for further investigation. Due to the inherent biodiversity, nature may still be the best source for new drug discovery.

REFERENCE COUNT: 11 THERE ARE 11 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 1 OF 5 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1986:454210 CAPLUS
DOCUMENT NUMBER: 105:54210
TITLE: Search for possible anti-tumor promoters by inhibition of 12-O-tetradecanoylphorbol-13-acetate-induced Epstein-Barr virus activation; ursolic acid and oleanolic acid from an anti-inflammatory Chinese medical plant, Glechoma hederaceae L
AUTHOR(S): Ohigashi, Hajime; Takamura, Hitoshi; Koshimizu, Koichi; Tokuda, Harukuni; Ito, Yohei
CORPORATE SOURCE: Fac. Agric., Kyoto Univ., Kyoto, 606, Japan
SOURCE: Cancer Letters (Shannon, Ireland) (1986), 30(2), 143-51
CODEN: CALEDQ; ISSN: 0304-3835
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Two triterpene carboxylic acids, ursolic acid (UA) [77-52-1] and oleanolic acid (OA) [508-02-1], were isolated from an antiinflammatory Chinese medicinal plant, G. hederaceae as inhibitors of 12-O-tetradecanoylphorbol 13-acetate (TPA) [16561-29-8]-induced **Epstein-Barr** virus (EBV) activation in Raji cells. Both acids inhibited activation of the virus at a 1000-fold molar ratio to TPA and also teleocidin B-4 [11032-05-6]. The dose-responses of the acids were very similar to those of the antitumor promoters, retinoic acid and **glycyrrhetinic acid** (GA). However, a characteristic property that UA and OA possess, is higher cell viability. Furthermore, enhancement of the inhibitory activity was found in 3-keto derivs. of UA and OA, whereas either loss of the O functionality at C-3 position of UA or oxidation at C-3 of GA led to reduction of the activity. Binding assays suggest that the inhibitory activity appears to be related to the binding of TPA to the receptor in the cells.

L4 ANSWER 2 OF 5 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1983:401608 CAPLUS
DOCUMENT NUMBER: 99:1608
TITLE: Inhibition of 12-O-tetradecanoylphorbol-13-acetate-induced induction in Epstein-Barr virus early antigen in Raji cells
AUTHOR(S): Okamoto, Hitoshi; Yoshida, Daisuke; Mizusaki, Shigenobu
CORPORATE SOURCE: Cent. Res. Inst., Japan Tob. and Salt Public Corp., Yokohama, 227, Japan
SOURCE: Cancer Letters (Shannon, Ireland) (1983), 19(1), 47-53
CODEN: CALEDQ; ISSN: 0304-3835
DOCUMENT TYPE: Journal
LANGUAGE: English
GI



I

AB Retinol [68-26-8], 5 flavonoids, 3 steroids, and 7 sweetening agents were

studied for their effects on TPA (I) [16561-29-8]-induced early antigen (EA) of **Epstein-Barr** virus (EBV) in Raji cells. Concomitant treatment of Raji cells with TPA and retinol inhibited EA induction. Among flavonoids, quercetin [117-39-5] resulted in effective inhibition of EA induction by TPA and α-naphthoflavone [604-59-1] showed a weakly inhibitory effect. None of the other flavonoids such as rutin [153-18-4], catechin [154-23-4] and β-naphthoflavone [6051-87-2] affected the induction of EBV-EA by TPA. β-Estradiol [50-28-2] obviously inhibited EBV-EA induction by TPA, but hydrocortisone [50-23-7] did not show any inhibitory effect. **Glycyrrhetinic acid**, steviol, phyllodulcin and perrillartine also strongly inhibited EBV-EA induction. Glycyrrhizin [1405-86-3] and stevioside [57817-89-7], glycosides of **glycyrrhetinic acid** [471-53-4] and steviol [471-80-7], did not inhibit the induction of EBV-EA by TPA. Some of these inhibitors may be effective in inhibiting the in vivo tumor promotion by TPA.

L4 ANSWER 3 OF 5 MEDLINE on STN
ACCESSION NUMBER: 86161439 MEDLINE
DOCUMENT NUMBER: PubMed ID: 3006912
TITLE: Search for possible antitumor promoters by inhibition of 12-O-tetradecanoylphorbol-13-acetate-induced Epstein-Barr virus activation; ursolic acid and oleanolic acid from an anti-inflammatory Chinese medicinal plant, Glechoma hederaceae L.
AUTHOR: Ohigashi H; Takamura H; Koshimizu K; Tokuda H; Ito Y
SOURCE: Cancer letters, (1986 Feb) Vol. 30, No. 2, pp. 143-51. Journal code: 7600053. ISSN: 0304-3835.
PUB. COUNTRY: Netherlands
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 198605
ENTRY DATE: Entered STN: 19900321
Last Updated on STN: 19900321
Entered Medline: 19860508

AB From an anti-inflammatory Chinese medicinal plant, Glechoma hederaceae L., two triterpene carboxylic acids, ursolic acid (UA) and oleanolic acid (OA) have been isolated as inhibitors of 12-O-tetradecanoylphorbol-13-acetate (TPA) induced **Epstein-Barr** virus (EBV) activation in Raji cells. Both acids significantly inhibited the activation at a 1000-fold molar ratio to TPA, and also teleocidin B-4. The dose responses of the acids were very similar to those of the antitumor promoters, retinoic acid (RA) and **glycyrrhetinic acid** (GA). However, a characteristic property that UA and OA possess, far higher cell viability to the Raji cells than RA to the Raji cells, has been pointed out. Furthermore, enhancement of the inhibitory activity was found in 3-keto derivatives of UA and OA, while either loss of oxygen functionality at C-3 position of UA or oxidation at C-3 of GA led to reduction of the activity. Binding assay suggested that the inhibitory activity should be exhibited by some event caused after binding of TPA to the receptor in the cells.

L4 ANSWER 4 OF 5 MEDLINE on STN
ACCESSION NUMBER: 84055021 MEDLINE
DOCUMENT NUMBER: PubMed ID: 6315213
TITLE: Inhibition of 12-O-tetradecanoylphorbol-13-acetate-induced ornithine decarboxylase activity in mouse epidermis by sweetening agents and related compounds.
AUTHOR: Okamoto H; Yoshida D; Saito Y; Mizusaki S
SOURCE: Cancer letters, (1983 Nov) Vol. 21, No. 1, pp. 29-35. Journal code: 7600053. ISSN: 0304-3835.
PUB. COUNTRY: Netherlands
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)

LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 198401
ENTRY DATE: Entered STN: 19900319
Last Updated on STN: 19900319
Entered Medline: 19840107

AB The effects of naturally occurring sweetening agents, which inhibited the induction of **Epstein-Barr** virus-associated early antigen (EBV-EA) induced by 12-O-tetradecanoylphorbol-13-acetate (TPA), and related compounds on the induction of ornithine decarboxylase (ODC) by TPA is examined. Application of **glycyrrhetinic acid** or steviol to mouse skin 1 h before TPA treatment showed a remarkable decrease in TPA-induced ODC activity. Post-treatment with **glycyrrhetinic acid** or steviol 1 h after application of TPA also resulted in a considerable depression in the induction of ODC activity. Neither **glycyrrhetinic acid** nor steviol alone induced epidermal ODC activity. These results suggest that **glycyrrhetinic acid** and steviol interfere with the process of induction of epidermal ODC by TPA treatment of mouse skin. cis-Abienol, frullanolide and norambreinolide, which have a partially similar structure in the moiety with **glycyrrhetinic acid** or steviol, were tested. cis-Abienol and frullanolide showed an inhibitory effect when applied 1 h before TPA treatment, but norambreinolide was not effective. A relationship between suppression of ODC activity and inhibition of EBV-EA induction is discussed.

L4 ANSWER 5 OF 5 MEDLINE on STN
ACCESSION NUMBER: 83206473 MEDLINE
DOCUMENT NUMBER: PubMed ID: 6850568
TITLE: Inhibition of 12-O-tetradecanoylphorbol-13-acetate-induced induction in Epstein-Barr virus early antigen in Raji cells.
AUTHOR: Okamoto H; Yoshida D; Mizusaki S
SOURCE: Cancer letters, (1983 May) Vol. 19, No. 1, pp. 47-53. Journal code: 7600053. ISSN: 0304-3835.
PUB. COUNTRY: Netherlands
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 198307
ENTRY DATE: Entered STN: 19900319
Last Updated on STN: 19990129
Entered Medline: 19830729

AB Retinol, 5 flavonoids, 3 steroids and 7 sweetening agents were studied for their effects on 12-O-tetradecanoylphorbol-13-acetate (TPA)-induced early antigen (EA) of **Epstein-Barr** virus (EBV) in Raji cells. Concomitant treatment of Raji cells with TPA and retinol showed inhibition of EA induction. Among flavonoids, quercetin resulted in effective inhibition of EA induction by TPA and alpha-naphthoflavone showed the weakly inhibitory effect. None of the other flavonoids such as rutin, catechin and beta-naphthoflavone affected the induction of EBV-EA by TPA. beta-Estradiol obviously inhibited EBV-EA induction by TPA, but hydrocortisone did not show any inhibitory effect on it. **Glycyrrhetinic acid**, steviol, phyllodulcin and perrillartine also showed the remarkable inhibition of EBV-EA induction. On the other hand, glycyrrhizin and stevioside, glycosides of **glycyrrhetinic acid** and steviol, did not inhibit the induction of EBV-EA by TPA. Some of the inhibitors reported here may be effective on the inhibition of the in vivo tumor promotion by TPA.

L8 ANSWER 1 OF 3 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2005:388776 CAPLUS
DOCUMENT NUMBER: 143:321849
TITLE: Antimicrobial activity of the medicinal mushroom Ganoderma
AUTHOR(S): Gao, Yihuai; Tang, Wenbo; Gao, He; Chan, Eli; Lan, Jin; Li, Xiaotian; Zhou, Shufeng
CORPORATE SOURCE: Institute of Food, Nutrition and Human Health, Massey University, Auckland, N. Z.
SOURCE: Food Reviews International (2005), 21(2), 211-229
CODEN: FRINEL; ISSN: 8755-9129
PUBLISHER: Taylor & Francis, Inc.
DOCUMENT TYPE: Journal; General Review
LANGUAGE: English
AB A review. Over the past century, a number of synthetic antimicrobial agents have been discovered and developed, but drug resistance and toxicity are still the major hindrances to gaining successful therapeutic outcomes in many instances. Herbal medicines may represent a safe and useful supplement to existing chemotherapeutic therapies for management of infectious diseases. Ganoderma has traditionally been used to treat chronic infectious diseases, such as chronic hepatitis and bronchitis. in Asia, where it is **administered** alone or more often in combination with chemotherapeutic agents. Preclin. (in vitro and in vivo animal) studies indicate that Ganoderma exhibits a broad spectrum of antibacterial arid antiviral activities, whereas data in human beings are scanty. Polysaccharides or **triterpenoids** from Ganoderma showed activities against herpes simple virus. Hepatitis B virus, HIV, and **Epstein-Barr virus** in vitro or in animal models. Ganoderma species also contain antibacterial constituents inhibiting Gram-pos. and/or Gram-neg. bacteria in vitro. However, it is difficult to extrapolate these findings to humans, as most of these preclin. studies were conducted under optimized conditions with the use of high doses of Ganoderma components. A double-blind, randomized, placebo-controlled clin. study indicated that treatment of hepatitis B patients with G. lucidum polysaccharides at 5400 mg/day for 12 wk resulted in significantly decreased serum HBV DNA and hepatitis B e antigen (HbeAg) levels. The mechanisms for the antimicrobial and antiviral activities of Ganoderma are largely undefined. Currently available data do not support tire use of Ganoderma as an antibiotic, but it may play an adjunct role for the management of bacterial and viral infection. Further studies are needed in humans.
REFERENCE COUNT: 113 THERE ARE 113 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L8 ANSWER 2 OF 3 MEDLINE on STN
ACCESSION NUMBER: 2005017579 MEDLINE
DOCUMENT NUMBER: PubMed ID: 15643564
TITLE: Potential anti-tumor promoting activity of lupane-type triterpenoids from the stem bark of Glochidion zeylanicum and Phyllanthus flexuosus.
AUTHOR: Tanaka Reiko; Kinouchi Yoshitaka; Wada Shun-ichi; Tokuda Harukuni
CORPORATE SOURCE: Department of Medicinal Chemistry, Osaka University of Pharmaceutical Sciences, Osaka, Japan.. tanakar@gly.oups.ac.jp
SOURCE: Planta medica, (2004 Dec) Vol. 70, No. 12, pp. 1234-6.
Journal code: 0066751. ISSN: 0032-0943.
PUB. COUNTRY: Germany: Germany, Federal Republic of
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200503

ENTRY DATE: Entered STN: 20050112
Last Updated on STN: 20050331
Entered Medline: 20050330

AB Four known lupane-type **triterpenoids**, glochidonol (1), glochidiol (2), lup-20(29)-ene-1beta,3beta-diol (3) and glochidone (3) were isolated from the stem bark of Glochidion zeylanicum. Previously, lupeol (5), lup-20(29)-ene-3beta,24-diol (6) and betulin (7) were isolated from the stem bark of Phyllanthus flexuosus. This study reports the assays of these lupane-type **triterpenoids**: all isolates 1-7 and synthetic analogues, glochidonyl acetate (1a), lup-20(29)-ene-1,3-dione (1b) and lup-20(29)-ene 3beta,24-diacetate (6a) were tested for their inhibitory effects on **Epstein-Barr virus** early antigen (EBV-EA) activation induced by 12-O-tetradecanoylphorbol 13-acetate (TPA). Among them, the effects of compounds 2 (IC50 = 290 mol ratio/32 pmol TPA) and 3 (IC50 = 300) were stronger than the others. In addition, compound 2 exhibited a strong inhibitory effect on mouse skin tumor promotion in an in vivo mouse two-stage carcinogenesis test.

L8 ANSWER 3 OF 3 MEDLINE on STN
ACCESSION NUMBER: 2004528924 MEDLINE
DOCUMENT NUMBER: PubMed ID: 15503357
TITLE: A new seco-abietane-type diterpene from the stem bark of Picea glehni.
AUTHOR: Tanaka Reiko; Wada Shun-ichi; Kinouchi Yoshitaka; Tokuda Harukuni; Matsunaga Shunyo
SOURCE: Planta medica, (2004 Sep) Vol. 70, No. 9, pp. 877-80. Journal code: 0066751. ISSN: 0032-0943.
PUB. COUNTRY: Germany: Germany, Federal Republic of
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200412
ENTRY DATE: Entered STN: 20041026
Last Updated on STN: 20041220
Entered Medline: 20041210

AB A new seco-abietane-type **diterpenoid**, 13S-hydroxy-9-oxo-9,10-seco-abiet-8(14)-en-18,10alpha-olide (1) along with a known lignan compound, pinoresinol (2) was isolated from the stem bark of Picea glehni (Fr. Schm.) Masters. Spectroscopic methods and chemical conversions were used to establish the structure of 1. In order to assess their cancer chemopreventive potential, the inhibition of **Epstein-Barr virus** early antigen (EBV-EA) activation induced by 12-O-tetradecanoylphorbol 13-acetate (TPA) was examined for compound 1, its synthetic analogue, 9,10-seco-8S,13S-epoxy-abiet-8(14)-en-18,10alpha-olide (1a) and 2. The inhibitory effect of 1a on EBV-EA induction was strong (0, 20.7, 67.1 and 89.2 % inhibition at 1000, 500,100 and 10 mol ratio/TPA). The IC50 of 1a was 226 mol ratio/32 pmol/TPA.

L7 ANSWER 96 OF 100 MEDLINE on STN
ACCESSION NUMBER: 95004242 MEDLINE
DOCUMENT NUMBER: PubMed ID: 7920430
TITLE: Inhibitory effects of cucurbitane **triterpenoids** on **Epstein-Barr virus** activation and two-stage carcinogenesis of skin tumors.
AUTHOR: Konoshima T; Takasaki M; Tatsumoto T; Kozuka M; Kasai R; Tanaka O; Nie R L; Tokuda H; Nishino H; Iwashima A
CORPORATE SOURCE: Kyoto Pharmaceutical University, Japan.
SOURCE: Biological & pharmaceutical bulletin, (1994 May) Vol. 17, No. 5, pp. 668-71.
Journal code: 9311984. ISSN: 0918-6158.
PUB. COUNTRY: Japan
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199410
ENTRY DATE: Entered STN: 19941222
Last Updated on STN: 19941222
Entered Medline: 19941025

AB To search for possible anti-tumor-promoters, we carried out a primary screening of 21 cucurbitane **triterpenoids** using an in vitro assay system. Of these **triterpenoids**, scandenoside R6 (6), 23,24-dihydrocucurbitacin F (14), 25-acetyl-23,24-dihydrocucurbitacin F (15), 2-O-beta-D-glucopyranosyl-23,24-dihydrocucurbitacin F (17) and cucurbitacin F (18) exhibited significant inhibitory effects on **Epstein-Barr virus** (EBV) activation induced by the tumor promoter, 12-O-tetradecanoyl-phorbol-13-acetate (TPA). Further, compounds 14 and 17 exhibited remarkable anti-tumor-promotion effects on mouse skin tumor promotion in an in vivo two-stage carcinogenesis test.

L7 ANSWER 80 OF 100 MEDLINE on STN
ACCESSION NUMBER: 2001532135 MEDLINE
DOCUMENT NUMBER: PubMed ID: 11578803
TITLE: Anti-tumor promoting effects of multiflorane-type triterpenoids and cytotoxic activity of karounidiol against human cancer cell lines.
AUTHOR: Akihisa T; Tokuda H; Ichiishi E; Mukainaka T; Toriumi M; Ukiya M; Yasukawa K; Nishino H
CORPORATE SOURCE: College of Science and Technology, Nihon University, 1-8 Kanda Surugadai, Chiyoda-ku, Tokyo 101-8308, Japan.. akihisa@chem.cst.nihon-u.ac.jp
SOURCE: Cancer letters, (2001 Nov 8) Vol. 173, No. 1, pp. 9-14. Journal code: 7600053. ISSN: 0304-3835.
PUB. COUNTRY: Ireland
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200112
ENTRY DATE: Entered STN: 20011002
Last Updated on STN: 20020122
Entered Medline: 20011204

AB Forty-nine multiflorane-type **triterpenoids** consisting of 11 compounds isolated from the seeds of Trichosanthes kirilowii (Cucurbitaceae) and 38 of their derivatives have been evaluated for their inhibitory effects on **Epstein-Barr virus** early antigen (EBV-EA) activation induced by the tumor promoter 12-O-tetradecanoylphorbol-13-acetate in Raji cells as a primary screening test for anti-tumor promoters. All of the compounds tested showed an inhibitory effect against EBV-EA activation, and among which 43 were revealed to possess remarkable activity with potencies either comparable to or stronger than that of glycyrrhetic acid, a known natural anti-tumor promoter. Their structure-activity relationship is discussed. Evaluation of the cytotoxic activity of karounidiol (27) against human cancer cell lines exhibited cytotoxicity especially against a human renal cancer.

L7 ANSWER 81 OF 100 MEDLINE on STN
ACCESSION NUMBER: 2001519589 MEDLINE
DOCUMENT NUMBER: PubMed ID: 11566485
TITLE: Cancer chemopreventive agents, serratane-type triterpenoids from Picea jezoensis.
AUTHOR: Tanaka R; Minami T; Tsujimoto K; Matsunaga S; Tokuda H; Nishino H; Terada Y; Yoshitake A
CORPORATE SOURCE: Department of Medicinal Chemistry, Osaka University of Pharmaceutical Sciences, 4-20-1 Nasahara, Takatsuki, 569-1094, Osaka, Japan.. tanakar@oysun01.oups.ac.jp
SOURCE: Cancer letters, (2001 Oct 30) Vol. 172, No. 2, pp. 119-26. Journal code: 7600053. ISSN: 0304-3835.
PUB. COUNTRY: Ireland
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200111
ENTRY DATE: Entered STN: 20010924
Last Updated on STN: 20011105
Entered Medline: 20011101

AB Seven serratane-type **triterpenoids** isolated from the cuticle of Picea jezoensis (Sieb. et Zucc.) Carr. jezoensis (Pinaceae) and the stem bark of Picea jezoensis (Sieb. et Zucc.) Carr. hondoensis (Mayer) Rehder (Pinaceae) were studied their possible inhibitory effects on **Epstein-Barr virus** early antigen (EBV-EA) activation induced by 12-O-tetradecanoylphorbol-13-acetate (TPA). All compounds showed strong inhibitory effects on the EBV-EA activation, being stronger than that of oleanolic acid, which exerts on cancer preventive

activity in animal carcinogenesis models. Among these compounds, 13alpha, 14alpha-epoxy-3beta-methoxyserratan-21beta-ol and 3beta-methoxy-21alpha-hydroxyserrat-14-en-29-al were investigated for the inhibitory effects in a two-stage mouse skin carcinogenesis test on mouse skin using 7,12-dimethylbenz[a]anthracene as initiator and TPA as promoter. 13alpha,14alpha-Epoxy-3beta-methoxyserratan-21beta-ol was found to exhibit the excellent anti-tumor promoting activity in the in vivo carcinogenesis test.

L7 ANSWER 82 OF 100 MEDLINE on STN
ACCESSION NUMBER: 2001364982 MEDLINE
DOCUMENT NUMBER: PubMed ID: 11425594
TITLE: Anti-tumor promoting diterpenes from the stem bark of Thuja standishii (Cupressaceae).
AUTHOR: Iwamoto M; Ohtsu H; Tokuda H; Nishino H; Matsunaga S; Tanaka R
CORPORATE SOURCE: Department of Medicinal Chemistry, Osaka University of Pharmaceutical Sciences, 4-20-1 Nasahara, Takatsuki, Osaka 569-1094, Japan.
SOURCE: Bioorganic & medicinal chemistry, (2001 Jul) Vol. 9, No. 7, pp. 1911-21.
Journal code: 9413298. ISSN: 0968-0896.
PUB. COUNTRY: England: United Kingdom
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200109
ENTRY DATE: Entered STN: 20010924
Last Updated on STN: 20010924
Entered Medline: 20010920

AB Three new labdane-type **diterpenoids**, labda-8(17),13-dien-15,12R-olid-19-oic acid (1), 12S-hydroxylabda-8(17),13(16),14-trien-19-oic acid (2) and 13-ethoxylabda-8(17),11,14-trien-19-oic acid (3), along with known **diterpenoids**, trans-communic acid (4), totarol (5), 12-methoxyabieta-8,11,13-trien-11-ol (6), and 7 alpha,8 alpha-epoxy-6 alpha-hydroxyabieta-9(11),13-dien-12-one (7) were isolated from the stem bark of Thuja standishii. The structures of 1--3 were established by spectroscopic methods and chemical conversion. These compounds together with standishinal (8), 12-hydroxy-6,7-seco-abieta-8,11,13-trien-6,7-dial (9) and 6 alpha-hydroxysugiol (10) were tested for their inhibitory effects on **Epstein--Barr virus** early antigen (EBV-EA) activation induced by 12-O-tetradecanoylphorbol-13-acetate (TPA), as a test for potential cancer chemopreventive agents. Compound 10 showed strong inhibitory effect on EBV-EA induction (100% inhibition at 1000 mol ratio/TPA), and compounds 2 and 6 showed moderate inhibitory effects on EBV-EA induction. In addition, 15-oxolabda-8(17),11Z,13E-trien-19-oic acid (11) was found to exhibit the anti-tumor promoting activity in two-stage mouse skin carcinogenesis test using 7,12-dimethylbenz[a]anthracene and TPA.

L7 ANSWER 83 OF 100 MEDLINE on STN
ACCESSION NUMBER: 2001175462 MEDLINE
DOCUMENT NUMBER: PubMed ID: 11270723
TITLE: Abietane **diterpenoids** from the cones of Larix kaempferi and their inhibitory effects on **Epstein -Barr virus** activation.
AUTHOR: Ohtsu H; Tanak R; In Y; Matsunaga S; Tokuda H; Nishino H
CORPORATE SOURCE: Department of Medicinal Chemistry, Osaka University of Pharmaceutical Sciences, Takatsuki, Japan.
SOURCE: Planta medica, (2001 Feb) Vol. 67, No. 1, pp. 55-60.
Journal code: 0066751. ISSN: 0032-0943.
PUB. COUNTRY: Germany: Germany, Federal Republic of
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English

FILE SEGMENT: Priority Journals
ENTRY MONTH: 200107
ENTRY DATE: Entered STN: 20010716
Last Updated on STN: 20010716
Entered Medline: 20010712

AB Four known (1-3, 8) and four new abietane diterpenes, 15-hydroxy-8alpha,14alpha,12alpha,13alpha-diepoxyabietan-18-oic acid (4), 7alpha,8alpha,13beta,14beta-diepoxyabietan-18-oic acid (5), 18-nor-abieta-8,11,13-triene-4alpha,7alpha,15-triol (6), and abieta-8,11,13-triene-7alpha,15,18-triol (7) were isolated from the CHCl3 extract of the cones of Larix koempferi. A known compound, 13,14-seco-13,14-dioxoabiet-13-en-18-oic acid (8) was isolated from natural sources for the first time. Their structures were determined by chemical and spectroscopic methods including 1D and 2D NMR techniques. The absolute stereostructure of 5 was determined by X-ray crystallographic analysis. The inhibitory effects of these compounds on Epstein-Barr virus early antigen (EBV-EA) activation induced by the tumor promoter, 12-O-tetradecanoylphorbol-13-acetate (TPA), were examined as a primary screening for antitumor promotors.

L7 ANSWER 84 OF 100 MEDLINE on STN
ACCESSION NUMBER: 2001091891 MEDLINE
DOCUMENT NUMBER: PubMed ID: 11090965
TITLE: Cancer chemopreventive agents, labdane diterpenoids from the stem bark of Thuja standishii (Gord.) Carr.
AUTHOR: Tanaka R; Ohtsu H; Iwamoto M; Minami T; Tokuda H; Nishino H; Matsunaga S; Yoshitake A
CORPORATE SOURCE: Department of Medicinal Chemistry, Osaka University of Pharmaceutical Sciences, 4-20-1 Nasahara, Takatsuki, 569-1094, Osaka, Japan.. tanakar@oysun01.oups.ac.jp
SOURCE: Cancer letters, (2000 Dec 20) Vol. 161, No. 2, pp. 165-70. Journal code: 7600053. ISSN: 0304-3835.
PUB. COUNTRY: Ireland
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200101
ENTRY DATE: Entered STN: 20010322
Last Updated on STN: 20010322
Entered Medline: 20010125

AB Seven labdane-type **diterpenoids** from the stem bark of Thuja standishii (Gord.) Carr. (Cupressaceae) and their analogues showed strong inhibitory effects on **Epstein-Barr virus** early antigen (EBV-EA) activation induced by 12-O-tetradecanoylphorbol-13-acetate (TPA). Among these compounds, 15,16-bisnor-13-oxolabda-8(17), 11E-dien-19-oic acid was revealed to have the strongest inhibitory effect on the EBV-EA activation, being stronger than that of beta-carotene which has been intensively studied in cancer prevention using animal models. 15,16-bisnor-13-Oxolabda-8(17), 11E-dien-19-oic acid was also found to exhibit the excellent anti-tumor promoting activity in two-stage mouse skin carcinogenesis test using 7,12-dimethylbenz[a]anthracene and TPA.

L7 ANSWER 85 OF 100 MEDLINE on STN
ACCESSION NUMBER: 2001090891 MEDLINE
DOCUMENT NUMBER: PubMed ID: 11105568
TITLE: Bioactive triterpenoids from the stem bark of Picea glehni.
AUTHOR: Tanaka R; Kinouchi Y; Tokuda H; Nishino H; Matsunaga S
CORPORATE SOURCE: Department of Medicinal Chemistry, Osaka University of Pharmaceutical Sciences, Japan.. tanakar@oysun01.oups.ac.jp
SOURCE: Planta medica, (2000 Oct) Vol. 66, No. 7, pp. 630-4. Journal code: 0066751. ISSN: 0032-0943.
PUB. COUNTRY: GERMANY: Germany, Federal Republic of
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English

FILE SEGMENT: Priority Journals
ENTRY MONTH: 200101
ENTRY DATE: Entered STN: 20010322
Last Updated on STN: 20010322
Entered Medline: 20010125

AB Two new **triterpenoids**, 3 alpha-methoxyserrat-14-en-21 beta-yl formate (1), and 24-methylcycloartenone (2), were isolated from the stem bark of Picea glehni (Fr. Schm.) Masters together with three known **triterpenoids**, 3 alpha-methoxyserrat-14-en-21 beta-ol, 3 beta-methoxyserrat-14-en-21 beta-ol, and piceanonol A. Compounds 1, 2, and a synthetic sample, 3 alpha-methoxyserrat-13-en-21 beta-yl formate showed potent inhibitory effects on **Epstein-Barr virus** early antigen (EBV-EA) activation induced by the tumor promoter 12-O-tetradecanoylphorbol-13-acetate (TPA).

L7 ANSWER 86 OF 100 MEDLINE on STN
ACCESSION NUMBER: 2001084505 MEDLINE
DOCUMENT NUMBER: PubMed ID: 10976526
TITLE: Anti-tumor promoting effects of sesquiterpenes from Maytenus cuzcoina (Celastraceae).
AUTHOR: Gonzalez A G; Tincusi B M; Bazzocchi I L; Tokuda H; Nishino H; Konoshima T; Jimenez I A; Ravelo A G
CORPORATE SOURCE: Instituto Universitario de Bio-Organica Antonio Gonzalez, Universidad de La Laguna, Tenerife, Canary Islands, Spain.
SOURCE: Bioorganic & medicinal chemistry, (2000 Jul) Vol. 8, No. 7, pp. 1773-8.
Journal code: 9413298. ISSN: 0968-0896.
PUB. COUNTRY: ENGLAND: United Kingdom
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200101
ENTRY DATE: Entered STN: 20010322
Last Updated on STN: 20010322
Entered Medline: 20010118

AB Ten **sesquiterpenoids** (1-10), with a dihydro-beta-agarofuran skeleton, were isolated from Maytenus cuzcoina (Celastraceae). Their structures were elucidated on the basis of spectral analysis, including homo- and heteronuclear correlations NMR experiments (COSY, ROESY, HMQC and HMBC), and chemical correlations. The compounds have been tested for their inhibitory effects on **Epstein-Barr virus** early antigen (EBV-EA) activation induced by 12-O-tetradecanoylphorbol-13-acetate (TPA), as a test for potential cancer chemopreventive agents. Compounds 1-3, 6 and 7 showed strong inhibitory effects on EBV-EA induction (100% inhibition at 1000 mol ratio/TPA). Their structure-activity relationship is discussed.

L7 ANSWER 87 OF 100 MEDLINE on STN
ACCESSION NUMBER: 2001075954 MEDLINE
DOCUMENT NUMBER: PubMed ID: 11000023
TITLE: Chemical constituents of Clausena excavata: isolation and structure elucidation of novel furanone-coumarins with inhibitory effects for tumor-promotion.
AUTHOR: Ito C; Itoigawa M; Katsuno S; Omura M; Tokuda H; Nishino H; Furukawa H
CORPORATE SOURCE: Faculty of Pharmacy, Meijo University, Tempaku, Nagoya 468-8503, Japan.
SOURCE: Journal of natural products, (2000 Sep) Vol. 63, No. 9, pp. 1218-24.
Journal code: 7906882. ISSN: 0163-3864.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals

ENTRY MONTH: 200101
ENTRY DATE: Entered STN: 20010322
Last Updated on STN: 20010322
Entered Medline: 20010111

AB A study of the chemical constituents of the leaves of Clausena excavata cultivated in a greenhouse led to the isolation and identification of 10 new furanone-coumarins named clauslactones A (1), B (2), C (3), D (4), E (5), F (6), G (7), H (8), I (9), and J (10), together with a known carbazole, clauszoline M, and a coumarin, umbelliferone. The new coumarins contain a C(10) **terpenoid** side chain with a furanone (gamma-lactone) moiety. Further, in clauslactones A-D (1-4), the **terpenoid** side chain was shown to be linked to the 7,8-dioxygenated coumarin skeleton through a 1, 4-dioxane ring system. This is the first example of coumarins with these structural characteristics in nature. These furanone-coumarins were found to exhibit inhibitory activity against 12-O-tetradecanoylphorbol-13-acetate-induced **Epstein-Barr virus** early antigen activation in Raji cells.

L7 ANSWER 88 OF 100 MEDLINE on STN
ACCESSION NUMBER: 2001062337 MEDLINE
DOCUMENT NUMBER: PubMed ID: 10959585
TITLE: Ichthyotoxic phloroglucinol derivatives from Dryopteris fragrans and their anti-tumor promoting activity.
AUTHOR: Ito H; Muranaka T; Mori K; Jin Z X; Tokuda H; Nishino H; Yoshida T
CORPORATE SOURCE: Faculty of Pharmaceutical Sciences, Okayama University, Tsushima, Japan.
SOURCE: Chemical & pharmaceutical bulletin, (2000 Aug) Vol. 48, No. 8, pp. 1190-5.
Journal code: 0377775. ISSN: 0009-2363.
PUB. COUNTRY: Japan
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200012
ENTRY DATE: Entered STN: 20010322
Last Updated on STN: 20010322
Entered Medline: 20001228

AB Two new ichthyotoxic compounds, aspidin PB (8) and dryofragin (9), along with three known phloroglucinol derivatives (1-3) and five **terpenoids**, were isolated from the whole herbs of Dryopteris fragrans by toxicity-directed fractionation using Oryzias latipes (Japanese name; medaka). The structures of the new compounds were determined by spectroscopic methods including 2D NMR techniques. Amongst the isolates, aspidin PB (8), dryofragin (9), and 1-5 exhibited potent ichthyotoxic activity against medaka with a median tolerance limit (TLm after 24 h) of 1.2-4.3 microg/ml. These compounds which are toxic to fish also had a potent inhibitory effect on the activation of **Epstein-Barr virus** early-antigen (EBV-EA) induced by tetradecanoyl phorbol 13-acetate, which is an in vitro short-term assay for anti-tumor promoting agents. Aspidin BB (2) and albicanol (4), which exhibited strong inhibitory effects on the EBV-EA activation, significantly suppressed an in vivo two-stage carcinogenesis on mouse skin.

L7 ANSWER 89 OF 100 MEDLINE on STN
ACCESSION NUMBER: 2000429355 MEDLINE
DOCUMENT NUMBER: PubMed ID: 10869208
TITLE: Potential antitumor-promoting diterpenoids from the stem bark of Picea glehni.
AUTHOR: Kinouchi Y; Ohtsu H; Tokuda H; Nishino H; Matsunaga S; Tanaka R
CORPORATE SOURCE: Department of Medicinal Chemistry, Osaka University of

Pharmaceutical Sciences, 4-20-1 Nasahara, Takatsuki, Osaka 569-1094, Japan.
SOURCE: Journal of natural products, (2000 Jun) Vol. 63, No. 6, pp. 817-20.
Journal code: 7906882. ISSN: 0163-3864.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200009
ENTRY DATE: Entered STN: 20000922
Last Updated on STN: 20000922
Entered Medline: 20000913

AB A novel rearranged labdane-type **diterpenoid**, 19(4-->3)abeo-8alpha, 13(S)-epoxylabda-4(18),14-diene (1), and two new abietane-type **diterpenoids**, 19-nor-abieta-4(18),8,11,13-tetraen-7-one (2) and 12-hydroxydehydroabietic acid (3) were isolated from the stem bark of Picea glehni, together with seven known **diterpenoids** -13-epimanoyl oxide (4), dehydroabietic acid (5), (11E)-14, 15-bisnor-8alpha-hydroxy-11-labden-13-one (6), abieta-8,11, 13-trien-7-one (7), 9alpha,13alpha-epidioxyabiet-8(14)-en-18-oic acid (8), 9,10alpha-epoxy-9,10-seco-abieta-8,11,13-trien-18-oic acid (9), and methyl 15-hydroxy-7-oxo-dehydroabietate (10). Compounds 5-8 and 10 showed potent inhibitory effects on **Epstein-Barr virus** early antigen (EBV-EA) activation induced by the tumor promoter 12-O-tetradecanoylphorbol 13-acetate.

L7 ANSWER 90 OF 100 MEDLINE on STN
ACCESSION NUMBER: 2000117928 MEDLINE
DOCUMENT NUMBER: PubMed ID: 10650087
TITLE: Bioactive steroids from the whole herb of Euphorbia chamaesyce.
AUTHOR: Tanaka R; Kasubuchi K; Kita S; Tokuda H; Nishino H; Matsunaga S
CORPORATE SOURCE: Department of Medicinal Chemistry, Osaka University of Pharmaceutical Sciences, 4-20-1 Nasahara, Takatsuki, Osaka 569-1094, Japan.. tanakar@oysun01.oups.ac.jp
SOURCE: Journal of natural products, (2000 Jan) Vol. 63, No. 1, pp. 99-103.
Journal code: 7906882. ISSN: 0163-3864.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200003
ENTRY DATE: Entered STN: 20000320
Last Updated on STN: 20000320
Entered Medline: 20000306

AB Three new ergostane-type steroids, 3beta-hydroxy-4alpha, 14alpha-dimethyl-5alpha-ergosta-8,24(28)-dien-11 -one (1); 3beta, 11alpha-dihydroxy-4alpha,14alpha-dimethyl-5alpha -ergosta-8, 24(28)-dien-7-one (2); and 3beta,7alpha-dihydroxy-4alpha, 14alpha-dimethyl-5alpha-ergosta-8,24(28)-dien-11 -one (3), were isolated, together with two known **triterpenoids**, wrightial and lup-20(30)-ene-3beta,29-diol from the whole herb of Euphorbia chamaesyce. Compound 3 showed a potent inhibitory effect on **Epstein-Barr virus** early antigen activation induced by the tumor promoter 12-O-tetradecanoylphorbol 13-acetate (TPA).

L7 ANSWER 91 OF 100 MEDLINE on STN
ACCESSION NUMBER: 1999334720 MEDLINE
DOCUMENT NUMBER: PubMed ID: 10408235
TITLE: Anti-carcinogenic activity of Taraxacum plant. II.
AUTHOR: Takasaki M; Konoshima T; Tokuda H; Masuda K; Arai Y;

Shiojima K; Ageta H
CORPORATE SOURCE: Kyoto Pharmaceutical University, Japan.
SOURCE: Biological & pharmaceutical bulletin, (1999 Jun) Vol. 22, No. 6, pp. 606-10.
Journal code: 9311984. ISSN: 0918-6158.
PUB. COUNTRY: Japan
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199909
ENTRY DATE: Entered STN: 19990925
Last Updated on STN: 19990925
Entered Medline: 19990914

AB Eleven **triterpenoids** (1-11) from the roots of Taraxacum japonicum (Compositae) were examined for their inhibitory effects on **Epstein-Barr virus** early antigen (EBV-EA) induced by the tumor promoter, 12-O-tetrade-canoylphorbol-13-acetate (TPA), in Raji cells as a primary screening test for anti-tumor-promoters (cancer chemopreventive agents). Of these **triterpenoids**, taraxasterol (1) and taraxerol (7) exhibited significant inhibitory effects on EBV-EA induction, but the inhibitory effects of their acetates 2 and 8 were weaker than those of 1 and 7. Furthermore, 1 and 7 exhibited potent anti-tumor-promoting activity in the two-stage carcinogenesis tests of mouse skin using 7,12-dimethylbenz[a]anthracene (DMBA) as an initiator and TPA as a promoter, and 1 showed a remarkable inhibitory effect on mouse spontaneous mammary tumors using C3H/OuJ mouse. These results strongly suggested that taraxasterol (1) could be a valuable chemopreventive agent.

L7 ANSWER 92 OF 100 MEDLINE on STN
ACCESSION NUMBER: 97238741 MEDLINE
DOCUMENT NUMBER: PubMed ID: 9122615
TITLE: Influence of Quillaja saponaria **triterpenoid** content on the immunomodulatory capacity of **Epstein -Barr virus** iscoms.
AUTHOR: Dotsika E; Karagouni E; Sundquist B; Morein B; Morgan A; Villacres-Eriksson M
CORPORATE SOURCE: Hellenic Pasteur Institute, Athens, Greece.
SOURCE: Scandinavian journal of immunology, (1997 Mar) Vol. 45, No. 3, pp. 261-8.
Journal code: 0323767. ISSN: 0300-9475.
PUB. COUNTRY: ENGLAND: United Kingdom
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199704
ENTRY DATE: Entered STN: 19970506
Last Updated on STN: 20021218
Entered Medline: 19970422

AB The immune responses to immunostimulating complexes (iscoms) containing recombinant **Epstein-Barr virus** (EBV) gp340 envelope protein was evaluated in BALB/c (H-2(d)) and CBA (H-2(k)) mice. Gp340-iscoms were used either with a low content of Quillaja **triterpenoid** adjuvant (L-iscoms) or supplemented with additional Quillaja adjuvant in the form of iscomatrix (S-iscoms). Class and subclass distribution of anti-gp340 antibodies, EBV-neutralizing antibodies, antigen-specific T cell proliferation and cytokine production were determined and these results compared to those obtained by immunization with non-adjuvated gp340. The H-2(d) and H-2(k) mice were characterized as low or high responders in respect to the level of specific anti-gp340 antibodies, secretion of IgG2a isotype, antigen-specific lymphoproliferative capacity, interferon-gamma (IFN-gamma) and interleukin-10 (IL-10) production in the basic immunizations with gp340. While presentation of the antigen in iscom

formulations with low levels of Quillaja **triterpenoids** induces a moderate enhancement of the immune responses in the low responder H-2(d) mice, supplementation with high levels of iscomatrix immunomodulator was required to enhance the immune responses in the high responder H-2(k) mice. In both mouse strains subcutaneous immunization with S-iscoms resulted in a significant increase of IgG1- and IgG2a-specific antibodies, as well as in strong antigen-specific proliferative response confirmed by the simultaneous cytokine production. The enhanced antigen-specific secretion of IL-2 and IFN-gamma together with the abrogation of IL-10 and the absence of IL-4 indicates that the responses were driven towards a Th1-type rather than Th2-type immune response. The S-iscom formulations minimized the differences in immune responses between the two mouse strains, but the capacity of immune sera to neutralize EBV transformation in vitro remained completely strain-dependent. These data indicate that immune responses generated by iscoms can be manipulated by altering the **triterpenoid** composition of the iscoms and that the levels of **triterpenoids** can determine whether or not a Th1-type response is made.

L7 ANSWER 93 OF 100 MEDLINE on STN
ACCESSION NUMBER: 96437162 MEDLINE
DOCUMENT NUMBER: PubMed ID: 8839970
TITLE: Anti-tumor-promoting activities of triterpenoids from ferns. I.
AUTHOR: Konoshima T; Takasaki M; Tokuda H; Masuda K; Arai Y; Shiojima K; Ageta H
CORPORATE SOURCE: Kyoto Pharmaceutical University, Japan.
SOURCE: Biological & pharmaceutical bulletin, (1996 Jul) Vol. 19, No. 7, pp. 962-5.
Journal code: 9311984. ISSN: 0918-6158.
PUB. COUNTRY: Japan
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199701
ENTRY DATE: Entered STN: 19970219
Last Updated on STN: 19970219
Entered Medline: 19970130

AB To search for possible anti-tumor-promoters (cancer chemopreventive agents), we carried out primary screening of 23 **triterpenoid** hydrocarbons (1-23) isolated from ferns using an in vitro synergistic assay system. Of these **triterpenoids**, hop-17(21)-ene (2), neohop-13(18)-ene (3), neohop-12-ene (4), taraxerane (17), multiflor-9(11)-ene (18), multiflor-8-ene (19), glutin-5(10)-ene (21) and taraxastane (23) exhibited remarkable inhibitory effects on **Epstein-Barr virus** (EBV) activation induced by the tumor promoter, 12-O-tetradecanoylphorbol-13-acetate (TPA). Further, compounds 2 and 3 exhibited remarkable anti-tumorpromoting effects on mouse skin tumor promotion in an in vivo two-stage carcinogenesis test using 7,12-dimethybenz[a]anthracene (DMBA) as an initiator and TPA as a promoter.

L7 ANSWER 94 OF 100 MEDLINE on STN
ACCESSION NUMBER: 96422334 MEDLINE
DOCUMENT NUMBER: PubMed ID: 8824951
TITLE: Inhibitory effects of lantadenes and related **triterpenoids** on **Epstein-Barr virus** activation.
AUTHOR: Inada A; Nakanishi T; Tokuda H; Nishino H; Iwashima A; Sharma O P
CORPORATE SOURCE: Faculty of Pharmaceutical Sciences, Setsunan University, Osaka, Japan.
SOURCE: Planta medica, (1995 Dec) Vol. 61, No. 6, pp. 558-9.
Journal code: 0066751. ISSN: 0032-0943.

PUB. COUNTRY: GERMANY: Germany, Federal Republic of
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199612
ENTRY DATE: Entered STN: 19970128
Last Updated on STN: 19970128
Entered Medline: 19961202

AB To search for possible antitumor promoters, inhibitory effects of lantadenes and related **triterpenoids** from Lantana camara L. (Verbenaceae) on **Epstein-Barr virus** activation, were tested. The substitutions on the carboxylic acid through an ester bond might play an important role in the activity.

L7 ANSWER 95 OF 100 MEDLINE on STN
ACCESSION NUMBER: 95261350 MEDLINE
DOCUMENT NUMBER: PubMed ID: 7742799
TITLE: Inhibitory effects of cucurbitane **triterpenoids** on **Epstein-Barr virus** activation and two-stage carcinogenesis of skin tumor. II.
AUTHOR: Konoshima T; Takasaki M; Kozuka M; Nagao T; Okabe H; Irino N; Nakasumi T; Tokuda H; Nishino H
CORPORATE SOURCE: Kyoto Pharmaceutical University, Japan.
SOURCE: Biological & pharmaceutical bulletin, (1995 Feb) Vol. 18, No. 2, pp. 284-7.
Journal code: 9311984. ISSN: 0918-6158.
PUB. COUNTRY: Japan
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199506
ENTRY DATE: Entered STN: 19950621
Last Updated on STN: 19950621
Entered Medline: 19950615

AB To search for possible anti-tumor-promoters, we carried out a primary screening of twenty-four 29-nor-cucurbitacin glucosides isolated from the roots of Cayaponia tayuya (Cucurbitaceae) using an in vitro synergistic assay system. Of these glucosides, cayaponosides B (5), B3 (7), D (8), D3b (22) and C2 (23) exhibited significant inhibitory effects on Epstein-Barr virus (EBV) activation induced by the tumor promoter, 12-O-tetradecanoylphorbol-13-acetate (TPA). Furthermore, 5 and 23 exhibited remarkable anti-tumor-promoting effects on mouse skin tumor promotion in an in vivo two-stage carcinogenesis test.

L7 ANSWER 96 OF 100 MEDLINE on STN
ACCESSION NUMBER: 95004242 MEDLINE
DOCUMENT NUMBER: PubMed ID: 7920430
TITLE: Inhibitory effects of cucurbitane **triterpenoids** on **Epstein-Barr virus** activation and two-stage carcinogenesis of skin tumors.
AUTHOR: Konoshima T; Takasaki M; Tatsumoto T; Kozuka M; Kasai R; Tanaka O; Nie R L; Tokuda H; Nishino H; Iwashima A
CORPORATE SOURCE: Kyoto Pharmaceutical University, Japan.
SOURCE: Biological & pharmaceutical bulletin, (1994 May) Vol. 17, No. 5, pp. 668-71.
Journal code: 9311984. ISSN: 0918-6158.
PUB. COUNTRY: Japan
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199410
ENTRY DATE: Entered STN: 19941222
Last Updated on STN: 19941222
Entered Medline: 19941025

AB To search for possible anti-tumor-promoters, we carried out a primary screening of 21 cucurbitane **triterpenoids** using an in vitro assay system. Of these **triterpenoids**, scandenoside R6 (6), 23,24-dihydrocucurbitacin F (14), 25-acetyl-23,24-dihydrocucurbitacin F (15), 2-O-beta-D-glucopyranosyl-23,24-dihydrocucurbitacin F (17) and cucurbitacin F (18) exhibited significant inhibitory effects on **Epstein-Barr virus** (EBV) activation induced by the tumor promoter, 12-O-tetradecanoyl-phorbol-13-acetate (TPA). Further, compounds 14 and 17 exhibited remarkable anti-tumor-promotion effects on mouse skin tumor promotion in an in vivo two-stage carcinogenesis test.

L7 ANSWER 97 OF 100 MEDLINE on STN
ACCESSION NUMBER: 92065270 MEDLINE
DOCUMENT NUMBER: PubMed ID: 1955883
TITLE: Constituents of leguminous plants, XIII. New triterpenoid saponins from Wistaria brachybotrys.
AUTHOR: Konoshima T; Kozuka M
CORPORATE SOURCE: Kyoto Pharmaceutical University, Misasagi, Yamashina-ku 607, Japan.
SOURCE: Journal of natural products, (1991 May-Jun) Vol. 54, No. 3, pp. 830-6.
Journal code: 7906882. ISSN: 0163-3864.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199112
ENTRY DATE: Entered STN: 19920124
Last Updated on STN: 19970203
Entered Medline: 19911230

AB Two new **triterpenoid** saponins, wistariasaponins D [1] amd G [2], and the known saponin dehydrosoyasaponin I [3] were isolated from the knots of Wistaria brachybotrys. The Structures of 1 and 2 were determined from their chemical and physicochemical evidence. The inhibitory effects of these saponins on the activation of **Epstein-Barr virus** early antigen that was induced by a tumor promoter were also tested for the primary screening of antitumor-promoting activities.

L7 ANSWER 98 OF 100 MEDLINE on STN
ACCESSION NUMBER: 88253243 MEDLINE
DOCUMENT NUMBER: PubMed ID: 2838164
TITLE: Inhibitory effects of 12-O-tetradecanoylphorbol-13-acetate and teleocidin B induced Epstein-Barr virus by saponin and its related compounds.
AUTHOR: Tokuda H; Konoshima T; Kozuka M; Kimura T
CORPORATE SOURCE: Department of Microbiology, Faculty of Medicine, Kyoto University, Japan.
SOURCE: Cancer letters, (1988 Jun 30) Vol. 40, No. 3, pp. 309-17.
Journal code: 7600053. ISSN: 0304-3835.
PUB. COUNTRY: Netherlands
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 198808
ENTRY DATE: Entered STN: 19900308
Last Updated on STN: 19900308
Entered Medline: 19880804

AB The inhibitory effects of triterpene glycosides and monoterpene glycosides on 12-O-tetradecanoylphorbol-13-acetate (TPA) and teleocidin B in the **Epstein-Barr virus** (EBV) activation in Raji cells were studied. Concomitant treatment of Raji cells with TPA or Teleocidin B and these glycosides showed the inhibition of EBV activation. We herein report in vitro structure-activity studies using a biological test system on a variety of triterpene glycosides having 1 sugar chain

(monodesmoside), 2 sugar chain (bisdesmoside) and an acyl side-chain. Among these glycosides, triterpene 3-O-glycosides and acylated saponin exhibited an effective inhibition of EBV activation; therefore, the sugar chain at C-3 of the triterpene and/or the acyl side-chain were determined to be essential to the inhibitory activities in this test system. The data suggested that these **triterpenoid** glycosides which were originally used as herbal drugs and folk remedies in many areas of the world, were in fact inhibitory compounds, thus explaining the EBV activation in the in vitro test system.

L7 ANSWER 99 OF 100 MEDLINE on STN
ACCESSION NUMBER: 87159881 MEDLINE
DOCUMENT NUMBER: PubMed ID: 3103947
TITLE: Structure-activity studies of the indole alkaloid tumor promoter teleocidins.
AUTHOR: Irie K; Hagiwara N; Tokuda H; Koshimizu K
SOURCE: Carcinogenesis, (1987 Apr) Vol. 8, No. 4, pp. 547-52. Journal code: 8008055. ISSN: 0143-3334.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 198705
ENTRY DATE: Entered STN: 19900303
Last Updated on STN: 19900303
Entered Medline: 19870506

AB New teleocidin derivatives with various substituents at positions 2, 5 and 7 of the indole ring were prepared from (-)-indolactam V, which is the fundamental structure of teleocidins and has a tumor-promoting activity, to examine the contribution of the alkyl substituents of teleocidins to the activity. Their possible tumor-promoting activities in vivo were evaluated by **Epstein-Barr virus** early antigen-inducing activity and inhibition of specific binding of [3H]TPA to a mouse epidermal particulate fraction. These two biological activities correlated well for each derivative. Large substituents at positions 2 and 5 remarkably lowered the activities, indicating that the structural requirements for the activities of these domains are especially strict. To investigate in detail the contribution of position 2 of (-)-indolactam V to the activities, new microbial metabolites, (-)-2-oxy-indolactam V, and blastmycetin B and C, were also tested. These compounds proved to be inactive, suggesting that the double bond at position 2 plays an important role for the activities. Substituents at position 7 generally enhanced the activities and even blastmycetin A, which is a dimer of (-)-indolactam V, showed high activities. The effects of the substituents on binding ability to the 12-O-tetradecanoylphorbol-13-acetate receptor were analyzed quantitatively using physicochemical substituent parameters and regression analysis. The results exhibited the fact that hydrophobicity of the substituents plays a critical role for receptor binding, and supported the hypothesis that the **monoterpenoid** moiety of teleocidins is involved in the non-specific hydrophobic interaction with phospholipids in cell membrane.

L7 ANSWER 100 OF 100 MEDLINE on STN
ACCESSION NUMBER: 86007125 MEDLINE
DOCUMENT NUMBER: PubMed ID: 2995261
TITLE: Structure-activity relationship in the induction of Epstein-Barr virus by teleocidin derivatives.
AUTHOR: Irie K; Tokuda H; Hagiwara N; Koshimizu K; Hayashi H; Murao S; Ito Y
SOURCE: International journal of cancer. Journal international du cancer, (1985 Oct 15) Vol. 36, No. 4, pp. 485-8. Journal code: 0042124. ISSN: 0020-7136.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)

LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 198511
ENTRY DATE: Entered STN: 19900321
Last Updated on STN: 19900321
Entered Medline: 19851112

AB New derivatives of (-)-indolactam V (Fig. 1), which have the basic ring-structure of teleocidins without the **monoterpenoid** moiety, were prepared and their **Epstein-Barr virus** early antigen (EBV-EA)-inducing activity was tested. (-)-14-O-Alkyl indolactam Vs (2 and 3) showed little induction of EBV-EA, while (-)-14-dehydroxyindolactam V (4) and (-)-14-chloroindolactam V (5) proved to be potent EBV-EA inducers, though their activities (EC50) were about 10 times weaker than that of (-)-indolactam V (1). These results indicate that the hydroxyl group at C-14 is not indispensable for EBV-EA induction and can be replaced. The activities (EC50) of (-)-1-N-methyl, (-)-1-N-ethyl, and (-)-1-N-butyl indolactam V (10, 11, and 12) were about 5 times weaker than that of (-)-indolactam V (1), while (-)-1-N-hexyl and (-)-1-N-octyl indolactam V (13 and 14) were even less active, suggesting that the free imino group of the indole ring in (-)-indolactam V (1) plays an important role in the activity, and that the activity cannot be enhanced by alkylation at the N-1 position of (-)-indolactam V (1).

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     (FILE 'HOME' ENTERED AT 13:08:49 ON 19 APR 2006)

     FILE 'CAPLUS, MEDLINE' ENTERED AT 13:09:00 ON 19 APR 2006
L1             6 S GLYCYRRHIZIN (P) EPSTEIN BARR VIR?
L2             6 S GLYCYRRHIZIN (P) EPSTEIN BARR
L3             4 S GLYCYRRHIZIC ACID (P) EPSTEIN BARR
L4             5 S GLYCYRRHETINIC ACID (P) EPSTEIN BARR
L5            12 S TERPENOID? (P) EPSTEIN BARR
L6           100 S ?TERPENOID? (P) EPSTEIN BARR
L7           100 S ?TERPENOID? (P) EPSTEIN BARR VIRUS
L8             3 S L7 AND ADMINIST?
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L1 ANSWER 12 OF 24 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1994:153711 CAPLUS
DOCUMENT NUMBER: 120:153711
TITLE: Tumor promotion inhibitors containing glycyrrhetic acid monoglucuronide
INVENTOR(S): Kozuka, Mutsuo; Tokuda, Harukuni; Mizutani, Kenji; Tamura, Kokichi; Kuramoto, Takashi
PATENT ASSIGNEE(S): Maruzen Seiyaku Kk, Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 7 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 05306228	A2	19931119	JP 1992-129884	19920424
JP 3163161	B2	20010508		
PRIORITY APPLN. INFO.:			JP 1992-129884	19920424

AB Tumor promotion inhibitors contain **glycyrrhetic** acid monoglucuronide (I) or its water-soluble salts as active ingredient. TPA-induced formation of **Epstein-Barr** virus early antigen was inhibited by I [at 1000 (by mol.) to TPA] by 100%, vs. 84.4% by **glycyrrhetic** acid.

L1 ANSWER 1 OF 24 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2005:520771 CAPLUS
DOCUMENT NUMBER: 143:165998
TITLE: Cancer preventive agents, Part 2: Synthesis and evaluation of 2-phenyl-4-quinolone and 9-oxo-9,10-dihydroacridine derivatives as novel antitumor promoters
AUTHOR(S): Nakamura, Seikou; Kozuka, Mutsuo; Bastow, Kenneth F.; Tokuda, Harukuni; Nishino, Hoyoku; Suzuki, Madoka; Tatsuzaki, Jin; Morris Natschke, Susan L.; Kuo, Sheng-Chu; Lee, Kuo-Hsiung
CORPORATE SOURCE: Natural Products Laboratory, School of Pharmacy, University of North Carolina, Chapel Hill, NC, 27599, USA
SOURCE: Bioorganic & Medicinal Chemistry (2005), 13(14), 4396-4401
CODEN: BMECEP; ISSN: 0968-0896
PUBLISHER: Elsevier Ltd.
DOCUMENT TYPE: Journal
LANGUAGE: English
OTHER SOURCE(S): CASREACT 143:165998
AB 2-Phenyl-4-quinolone and 9-oxo-9,10-dihydroacridine derivs. were synthesized and screened as potential antitumor promoters by examining the ability of the compds. to inhibit **Epstein-Barr** virus early antigen (EBV-EA) activation induced by the tumor promoter 12-O-tetradecanoylphorbol-13-acetate (TPA) in Raji cells. Interestingly, compds. 14, 15, and 17 showed similar inhibitory effects (89-92%, 66-69%, and 24-29% at 1000, 500, and 100 mol ratio to TPA, resp.) against EBV-EA with potencies comparable to those of **glycyrrhetic** acid, a known natural antitumor-promoter.
REFERENCE COUNT: 16 THERE ARE 16 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L1 ANSWER 2 OF 24 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2003:499243 CAPLUS
DOCUMENT NUMBER: 139:374307
TITLE: Mechanism of action of **glycyrrhizic** acid in inhibition of **Epstein-Barr** virus replication in vitro
AUTHOR(S): Lin, Jung-Chung
CORPORATE SOURCE: College of Medicine, Department of Microbiology, Tzu Chi University, Hualien, 970, Taiwan
SOURCE: Antiviral Research (2003), 59(1), 41-47
CODEN: ARSRDR; ISSN: 0166-3542
PUBLISHER: Elsevier Science B.V.
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The authors report here that glycyrrhizic acid (GL), a component of licorice root (Glycyrrhiza radix), is active against EBV replication in superinfected Raji cells in a dose-dependent fashion. The IC50 values for viral inhibition and cell growth were 0.04 and 4.8 mM, resp. The selectivity index (ratio of IC50 for cell growth to IC50 for viral DNA synthesis) was 120. Time of addition expts. suggested that GL interferes with an early step of the EBV replication cycle (possibly penetration). GL had no effect on viral adsorption nor did it inactivate EBV particles. Thus, GL represents a new class of anti-EBV compds. with a mode of action different from that of the nucleoside analogs that inhibit viral DNA polymerase.
REFERENCE COUNT: 33 THERE ARE 33 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L1 ANSWER 3 OF 24 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2003:289081 CAPLUS

DOCUMENT NUMBER: 139:301037
TITLE: Anti-carcinogenic activities of natural sweeteners
AUTHOR(S): Konoshima, Takao; Takasaki, Midori
CORPORATE SOURCE: Lab. Pharmaceutical Sci. Natural Resources, Kyoto Pharmaceutical Univ., Tokyo, 607-8414, Japan
SOURCE: Foods & Food Ingredients Journal of Japan (2003), 208(3), 184-191
CODEN: FFIJER; ISSN: 0919-9772
PUBLISHER: FFI Janaru
DOCUMENT TYPE: Journal; General Review
LANGUAGE: Japanese

AB A review. Many kinds of antitumor agents and their related compds. have been isolated from natural resources, and the medicinal sciences have made rapid progress in the treatment of carcinogenesis, however, cancer currently remains a tragic disease and is one of the major causes of death worldwide. Furthermore, perfectly effective antitumor agents free from side effects have not been found yet, and these side effects of antitumor agents are serious problems in the treatment of cancer. Therefore, the advancement of chemoprevention is important, as well as the development of cancer treatment. To search for possible cancer-chemopreventive agents from natural sources, several natural sweeteners were screened by the in vitro assay indicated by the inhibitory effects of **Epstein-Barr** virus early antigen (EBV-EA) induction. Of active compds. that showed the remarkable inhibitory effects on the EBV-EA induction, stevioside, from the leaves of Stevia rebaudiana, and mogroside V, from the fruits of Momordica grosvenori, exhibited significant inhibitory effects on the two-stage mouse skin carcinogenesis in vivo induced by 7,12-dimethylbenzy[a]anthracene (DMBA) and 12-O-tetradecanoylphorbol-13-acetate (TPA). The inhibitory effects of these sweeteners are stronger than that of **glycyrrhizin**, which had been known as an anti-tumor-promoter in chemical carcinogenesis. Furthermore, stevioside also inhibited mouse skin carcinogenesis initiated by peroxynitrite (ONOO). These results suggested that stevioside and mogroside V, which have been used as an alternative sweetener to sucrose might be also valuable as chemopreventive agents for chemical carcinogenesis.

L1 ANSWER 4 OF 24 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2003:144 CAPLUS
DOCUMENT NUMBER: 138:183970
TITLE: Polyprenylated benzophenones from Garcinia assigu and their potential cancer chemopreventive activities
AUTHOR(S): Ito, Chihiro; Itoigawa, Masataka; Miyamoto, Yoshiaki; Onoda, Saori; Rao, K. Sundar; Mukainaka, Teruo; Tokuda, Harukuni; Nishino, Hoyoku; Furukawa, Hiroshi
CORPORATE SOURCE: Faculty of Pharmacy, Meijo University, Tempaku, Nagoya, 468-8503, Japan
SOURCE: Journal of Natural Products (2003), 66(2), 206-209
CODEN: JNPRDF; ISSN: 0163-3864
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English

AB In a further study on the chemical constituents of Garcinia assigu, two new benzophenones corresponding to the 13-O-Me ethers (1 and 2) of the known isogarcinol and garcinol, resp., were isolated and characterized, along with known benzophenones (3-6). Inhibitory effects of the benzophenones isolated from this plant on **Epstein-Barr** virus early antigen (EBV-EA) activation induced by 12-O-tetradecanoylphorbol-13-acetate in Raji cells and their radical-scavenging ability against 1,1-diphenyl-2-picrylhydrazyl were demonstrated. The cyclized polyprenylbenzophenones (1-5) showed comparable or stronger potential cancer chemopreventive activity when compared to **glycyrrhetic** acid, a known anti-tumor promoter.

REFERENCE COUNT: 15 THERE ARE 15 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L1 ANSWER 5 OF 24 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2002:640085 CAPLUS
DOCUMENT NUMBER: 137:309776
TITLE: Cancer-chemopreventive effects of natural sweeteners and related compounds
AUTHOR(S): Konoshima, Takao; Takasaki, Midori
CORPORATE SOURCE: Kyoto Pharmaceutical University, Kyoto, 607-8414, Japan
SOURCE: Pure and Applied Chemistry (2002), 74(7), 1309-1316
CODEN: PACHAS; ISSN: 0033-4545
PUBLISHER: International Union of Pure and Applied Chemistry
DOCUMENT TYPE: Journal
LANGUAGE: English
AB To search for possible cancer-chemopreventive agents from natural resources, several natural sweeteners were screened by the in vitro assay indicated by the inhibitory effects of **Epstein-Barr** virus early antigen (EBV-EA) induction. Of active compds. that showed the remarkable inhibitory effects on the EBV-EA induction, stevioside, from the leaves of Stevia rebaudiana, and mogroside V, from the fruits of Momordica grosvenori, exhibited significant inhibitory effects on the two-stage mouse skin carcinogenesis in vivo induced by 7,12-dimethylbenz[a]anthracene (DMBA) and 12-O-tetradecanoylphorbol-13-acetate (TPA). The inhibitory effect of stevioside is stronger than that of **glycyrrhizin**, which had been known as an antitumor-promoter in chemical carcinogenesis. Furthermore, stevioside also inhibited mouse skin carcinogenesis initiated by peroxynitrite. These results suggest that stevioside and mogroside V might be valuable as chemopreventive agents for chemical carcinogenesis.
REFERENCE COUNT: 20 THERE ARE 20 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L1 ANSWER 6 OF 24 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2002:168694 CAPLUS
DOCUMENT NUMBER: 137:379713
TITLE: Inhibitory effect of herbal remedies on 12-o-tetradecanoylphorbol-13-acetate-promoted Epstein-Barr virus early antigen activation
AUTHOR(S): Kapadia, Govind J.; Azuine, Magnus A.; Tokuda, Harukuni; Hang, Eric; Mukainaka, T.; Nishino, Hoyoku; Sridhar, Rajagopalan
CORPORATE SOURCE: Laboratory of Natural Drug Products, Department of Pharmaceutical Sciences, School of Pharmacy, Howard University, Washington, DC, 20059, USA
SOURCE: Pharmacological Research (2002), 45(3), 213-220
CODEN: PHMREP; ISSN: 1043-6618
PUBLISHER: Elsevier Science
DOCUMENT TYPE: Journal
LANGUAGE: English
AB For the past several years we have been evaluating natural products as potential cancer chemopreventive agents in a short term in vitroassay involving Epstein-Barr virus early antigen (EBV-EA) activation in Raji cells promoted by phorbol ester, 12-O-tetradecanoylphorbol-13-acetate (TPA). Because of the current interest in the use of herbal remedies, we considered examining them for their cancer chemopreventive activities, using their exts. with a view to uncovering such benefits (if any) these remedies might possess. Thirty-six exts. of 32 herbs belonging to 27 families in use as herbal remedies including those of gingko, black cohosh, echinacea, kava-kava, saw palmetto, turmeric, angelica, wild yam, cat's claw, passion flower, muira puama, feverfew, blueberry, chasteberry, licorice, nettle, golden seal, pygeum, ginger, valerian and hops were prepared and evaluated. Turmeric at a concentration of 10 μg ml -1 exhibited the most potent anti-EBV-EA activity, which is ten times more than passionflower, that is next in the order of activity. At the concentration level

of 100 μg ml -1, several of the herbal remedies tested inhibited the EBV-EA in Raji cells exposed to the tumor promoter TPA (32 pM) by more than 90%. We also report for the first time the activities of 16 new medicinal plants as potential cancer chemopreventive agents. Since inhibitors of EBV-EA promoted by TPA in vitro have been shown to be effective anti-tumor promoting agents in laboratory animal models, our results indicate new and potential applications of these herbal remedies as cancer chemopreventive agents since they are already in clin. use in the human population.

REFERENCE COUNT: 46 THERE ARE 46 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L1 ANSWER 7 OF 24 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2002:65577 CAPLUS
DOCUMENT NUMBER: 137:163403
TITLE: Constituents of Compositae plants III. Anti-tumor promoting effects and cytotoxic activity against human cancer cell lines of triterpene diols and triols from edible chrysanthemum flowers
AUTHOR(S): Ukiya, Motohiko; Akihisa, Toshihiro; Tokuda, Harukuni; Suzuki, Hiroyuki; Mukainaka, Teruo; Ichiishi, Eiichiro; Yasukawa, Ken; Kasahara, Yoshimasa; Nishino, Hoyoku
CORPORATE SOURCE: College of Science and Technology, Nihon University, Chiyoda-ku, Tokyo, 101-8308, Japan
SOURCE: Cancer Letters (Shannon, Ireland) (2002), 177(1), 7-12
CODEN: CALEDQ; ISSN: 0304-3835
PUBLISHER: Elsevier Science Ireland Ltd.
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Fifteen pentacyclic triterpene diols and triols, consisting of: six taraxastanes, faradiol (1), heliantriol B0 (2), heliantriol C (3), 22α-methoxyfaradiol (4), arnidiol (5), and faradiol α-epoxide (6); five oleananes, maniladiol (7), erythrodiol (8), longispinogenin (9), coflodiol (10), and heliantriol A1 (11); two ursanes, brein (12) and uvaol (13); and two lupanes, calenduladiol (14) and heliantriol B2 (15), isolated from the non-saponifiable lipid fraction of the edible flower extract of chrysanthemum (Chrysanthemum morifolium) were evaluated for their inhibitory effects on **Epstein-Barr** virus early antigen (EBV-EA) activation induced by the tumor promoter, 12-O-tetradecanoylphorbol-13-acetate, in Raji cells as a primary screening test for antitumor-promoters. All of the compds. tested showed inhibitory effects against EBV-EA activation with potencies either comparable with or stronger than that of **glycyrrhetic** acid, a known natural antitumor-promoter. Evaluation of the cytotoxic activity of six compds., 1-3 and 5-7, against human cancer cell lines revealed that compound 5 possesses a wide range of cytotoxicity, with GI50 values (concentration that yields 50% growth) of mostly less than 6 μM.
REFERENCE COUNT: 10 THERE ARE 10 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L1 ANSWER 8 OF 24 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2001:863496 CAPLUS
DOCUMENT NUMBER: 135:366719
TITLE: Composition for and method of treatment of Kaposi's sarcoma and Kaposi's sarcoma-associated herpesvirus infection using triterpenoids
INVENTOR(S): Flore, Ornella
PATENT ASSIGNEE(S): USA
SOURCE: U.S., 16 pp.
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 6323183	B1	20011127	US 1999-324473	19990602
US 2002091158	A1	20020711	US 2001-976838	20011015
PRIORITY APPLN. INFO.:			US 1999-324473 A3	19990602

AB Methods and compns. for treating Kaposi's sarcoma and **Epstein Barr** virus using a a therapeutic derivative of a triterpenoid acid and derivs. thereof are disclosed. The present invention relates to the use of a triterpenoid preferably a **glycyrrhizic** acid (**glycyrrhizin**) to inhibit the transcription of viral latent genes and the consequential viral latent cycle at doses that do not affect the uninfected cells. Using **glycyrrhizic** acid and derivs., the Kaposi's sarcoma-associated herpesvirus (KSHV) infected cells are completely killed six days after treatment.

REFERENCE COUNT: 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L1 ANSWER 9 OF 24 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2001:709029 CAPLUS

DOCUMENT NUMBER: 136:95571

TITLE: Anti-tumor promoting effects of multiflorane-type triterpenoids and cytotoxic activity of karounidiol against human cancer cell lines

AUTHOR(S): Akihisa, T.; Tokuda, H.; Ichiishi, E.; Mukainaka, T.; Toriumi, M.; Ukiya, M.; Yasukawa, K.; Nishino, H.

CORPORATE SOURCE: Nihon University, College of Science and Technology, Tokyo, Chiyoda-ku, 101-8308, Japan

SOURCE: Cancer Letters (Shannon, Ireland) (2001), 173(1), 9-14
CODEN: CALEDQ; ISSN: 0304-3835

PUBLISHER: Elsevier Science Ireland Ltd.

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Forty-nine multiflorane-type triterpenoids consisting of 11 compds. isolated from the seeds of Trichosanthes kirilowii (Cucurbitaceae) and 38 of their derivs. have been evaluated for their inhibitory effects on **Epstein-Barr** virus early antigen (EBV-EA) activation induced by the tumor promoter 12-O-tetradecanoylphorbol-13-acetate in Raji cells as a primary screening test for antitumor promoters. All of the compds. tested showed an inhibitory effect against EBV-EA activation, and among which 43 were revealed to possess remarkable activity with potencies either comparable to or stronger than that of **glycyrrhetic** acid, a known natural antitumor promoter. Their structure-activity relation is discussed. Evaluation of the cytotoxic activity of karounidiol against human cancer cell lines exhibited cytotoxicity especially against a human renal cancer.

REFERENCE COUNT: 13 THERE ARE 13 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L1 ANSWER 10 OF 24 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1998:763541 CAPLUS

DOCUMENT NUMBER: 130:172862

TITLE: Epstein-Barr virus DNA polymerase inhibitors from Chinese herbs: use of preliminary screening, physicochemical properties and taxonomy for new lead compounds generation

AUTHOR(S): Lien, Eric J.; Bui, Huynh-Hoa; Ren, Shijun; Liu, Karin C. S. Chen; Lin, Mei-Tsu; Chiou, Juo-Farn

CORPORATE SOURCE: Department of Pharmaceutical Sciences, School of Pharmacy, University of Southern California, Los Angeles, CA, 90033, USA

SOURCE: Chinese Pharmaceutical Journal (Taipei) (1998), 50(4), 233-247

CODEN: CPHJEP; ISSN: 1016-1015
PUBLISHER: Pharmaceutical Society of Republic of China
DOCUMENT TYPE: Journal
LANGUAGE: English
AB A paradigm of combining preliminary screening data, SAR, functional group and taxonomical analyses has been proposed for new lead compds. generation. Based on the screening data of 38 natural products, a quaternary ammonium derivative (coptisine chloride), a sesquiterpene with an α,β-unsatd. lactone function and an isoflavonoid (daidzein) have been found to be most active. Based on the analyses of overall structures, physicochem. properties and taxonomical relationships, 47 related compds. and six families of plants are suggested for further investigation. Due to the inherent biodiversity, nature may still be the best source for new drug discovery.
REFERENCE COUNT: 11 THERE ARE 11 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L1 ANSWER 11 OF 24 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1995:441846 CAPLUS
DOCUMENT NUMBER: 122:305851
TITLE: Inhibitors of skin-tumor promotion. XIII. Inhibitory effects of euglobals and their related compounds on Epstein-Barr virus activation and on two-stage carcinogenesis of mouse skin tumors. (2)
AUTHOR(S): Takasaki, Midori; Konoshima, Takao; Kozuka, Mutsuo; Yoneyama, Koichi; Yoshida, Shigeo; Tokuda, Harukuni; Nishino, Hoyoku; Iwashima, Akio
CORPORATE SOURCE: Kyoto Pharm. Univ., Kyoto, 607, Japan
SOURCE: Biological & Pharmaceutical Bulletin (1995), 18(2), 288-94
CODEN: BPBLEO; ISSN: 0918-6158
PUBLISHER: Pharmaceutical Society of Japan
DOCUMENT TYPE: Journal
LANGUAGE: English
AB One hundred and fifteen synthesized mono, di, and trihydroxybenzamide and thiobenzamide derivs. having structures related to euglobals were examined for their inhibitory effects on **Epstein-Barr** virus (EBV) activation by 12-O-tetradecanoylphorbol-13-acetate (TPA) as a primary screening test for anti-tumor-promoters. In general, 3-acyl-2,4,6-trihydroxybenzamide and 3-acyl-2,4,6-trihydroxythiobenzamide derivs. exhibited strong or moderate activities, and the latter compds. were less cytotoxic than the former. Meanwhile, little or no activity was observed with mono and dihydroxybenzamide and dihydroxythiobenzamide derivs. Structural requirements for the activities of these compds. have been discussed in detail. Among the above compds., compds. 36 and 73, which were significantly active on the inhibition of EBV activation, were investigated using a two-stage mouse skin carcinogenesis test induced by 7,12-dimethylbenz[a]anthracene (DMBA) and TPA. The results of the in vivo test showed that both compds. have a stronger inhibitory effect than that of the well-known anti-tumor-promoter, **glycyrrhetic** acid. These results suggested that the two compds. might be valuable as anti-tumor-promoters in chemical carcinogenesis.

L1 ANSWER 12 OF 24 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1994:153711 CAPLUS
DOCUMENT NUMBER: 120:153711
TITLE: Tumor promotion inhibitors containing glycyrrhetic acid monoglucuronide
INVENTOR(S): Kozuka, Mutsuo; Tokuda, Harukuni; Mizutani, Kenji; Tamura, Kokichi; Kuramoto, Takashi
PATENT ASSIGNEE(S): Maruzen Seiyaku Kk, Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 7 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent

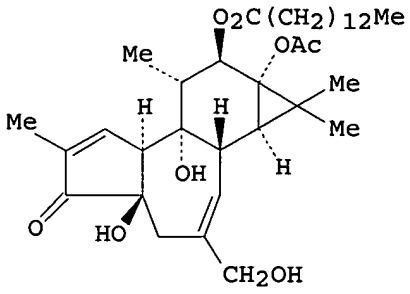
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 05306228	A2	19931119	JP 1992-129884	19920424
JP 3163161	B2	20010508		
PRIORITY APPLN. INFO.:			JP 1992-129884	19920424

AB Tumor promotion inhibitors contain **glycyrrhetic** acid monoglucuronide (I) or its water-soluble salts as active ingredient. TPA-induced formation of **Epstein-Barr** virus early antigen was inhibited by I [at 1000 (by mol.) to TPA] by 100%, vs. 84.4% by **glycyrrhetic** acid.

L1 ANSWER 13 OF 24 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1986:454210 CAPLUS
DOCUMENT NUMBER: 105:54210
TITLE: Search for possible anti-tumor promoters by inhibition of 12-O-tetradecanoylphorbol-13-acetate-induced Epstein-Barr virus activation; ursolic acid and oleanolic acid from an anti-inflammatory Chinese medical plant, Glechoma hederaceae L
AUTHOR(S): Ohigashi, Hajime; Takamura, Hitoshi; Koshimizu, Koichi; Tokuda, Harukuni; Ito, Yohei
CORPORATE SOURCE: Fac. Agric., Kyoto Univ., Kyoto, 606, Japan
SOURCE: Cancer Letters (Shannon, Ireland) (1986), 30(2), 143-51
CODEN: CALEDQ; ISSN: 0304-3835
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Two triterpene carboxylic acids, ursolic acid (UA) [77-52-1] and oleanolic acid (OA) [508-02-1], were isolated from an antiinflammatory Chinese medicinal plant, G. hederaceae as inhibitors of 12-O-tetradecanoylphorbol 13-acetate (TPA) [16561-29-8]-induced **Epstein-Barr** virus (EBV) activation in Raji cells. Both acids inhibited activation of the virus at a 1000-fold molar ratio to TPA and also teleocidin B-4 [11032-05-6]. The dose-responses of the acids were very similar to those of the antitumor promoters, retinoic acid and **glycyrrhetinic** acid (GA). However, a characteristic property that UA and OA possess, is higher cell viability. Furthermore, enhancement of the inhibitory activity was found in 3-keto derivs. of UA and OA, whereas either loss of the O functionality at C-3 position of UA or oxidation at C-3 of GA led to reduction of the activity. Binding assays suggest that the inhibitory activity appears to be related to the binding of TPA to the receptor in the cells.

L1 ANSWER 14 OF 24 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1983:401608 CAPLUS
DOCUMENT NUMBER: 99:1608
TITLE: Inhibition of 12-O-tetradecanoylphorbol-13-acetate-induced induction in Epstein-Barr virus early antigen in Raji cells
AUTHOR(S): Okamoto, Hitoshi; Yoshida, Daisuke; Mizusaki, Shigenobu
CORPORATE SOURCE: Cent. Res. Inst., Japan Tob. and Salt Public Corp., Yokohama, 227, Japan
SOURCE: Cancer Letters (Shannon, Ireland) (1983), 19(1), 47-53
CODEN: CALEDQ; ISSN: 0304-3835
DOCUMENT TYPE: Journal
LANGUAGE: English
GI



I

AB Retinol [68-26-8], 5 flavonoids, 3 steroids, and 7 sweetening agents were studied for their effects on TPA (I) [16561-29-8]-induced early antigen (EA) of **Epstein-Barr** virus (EBV) in Raji cells. Concomitant treatment of Raji cells with TPA and retinol inhibited EA induction. Among flavonoids, quercetin [117-39-5] resulted in effective inhibition of EA induction by TPA and α-naphthoflavone [604-59-1] showed a weakly inhibitory effect. None of the other flavonoids such as rutin [153-18-4], catechin [154-23-4] and β-naphthoflavone [6051-87-2] affected the induction of EBV-EA by TPA. β-Estradiol [50-28-2] obviously inhibited EBV-EA induction by TPA, but hydrocortisone [50-23-7] did not show any inhibitory effect. **Glycyrrhetinic** acid, steviol, phyllodulcin and perrillartine also strongly inhibited EBV-EA induction. **Glycyrrhizin** [1405-86-3] and stevioside [57817-89-7], glycosides of **glycyrrhetinic** acid [471-53-4] and steviol [471-80-7], did not inhibit the induction of EBV-EA by TPA. Some of these inhibitors may be effective in inhibiting the in vivo tumor promotion by TPA.

L1 ANSWER 15 OF 24 MEDLINE on STN
ACCESSION NUMBER: 2005305760 MEDLINE
DOCUMENT NUMBER: PubMed ID: 15914009
TITLE: Cancer preventive agents, Part 2: Synthesis and evaluation of 2-phenyl-4-quinolone and 9-oxo-9,10-dihydroacridine derivatives as novel antitumor promoters.
AUTHOR: Nakamura Seikou; Kozuka Mutsuo; Bastow Kenneth F; Tokuda Harukuni; Nishino Hoyoku; Suzuki Madoka; Tatsuzaki Jin; Morris Natschke Susan L; Kuo Sheng-Chu; Lee Kuo-Hsiung
CORPORATE SOURCE: Natural Products Laboratory, School of Pharmacy, University of North Carolina, Chapel Hill, NC 27599, USA.
CONTRACT NUMBER: CA 17625 (NCI)
SOURCE: Bioorganic & medicinal chemistry, (2005 Jul 15) Vol. 13, No. 14, pp. 4396-401.
Journal code: 9413298. ISSN: 0968-0896.
PUB. COUNTRY: England: United Kingdom
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200510
ENTRY DATE: Entered STN: 20050615
Last Updated on STN: 20051012
Entered Medline: 20051011

AB 2-Phenyl-4-quinolone and 9-oxo-9,10-dihydroacridine derivatives were synthesized and screened as potential antitumor promoters by examining the ability of the compounds to inhibit **Epstein-Barr** virus early antigen (EBV-EA) activation induced by the tumor promoter 12-O-tetradecanoylphorbol-13-acetate (TPA) in Raji cells. Interestingly, compounds 14, 15, and 17 showed similar inhibitory effects (89-92%, 66-69%, and 24-29% at 1000, 500, and 100 mol ratio to TPA, respectively) against EBV-EA with potencies comparable to those of **glycyrrhetic** acid, a known natural antitumor-promoter.

L1 ANSWER 16 OF 24 MEDLINE on STN
ACCESSION NUMBER: 2003306618 MEDLINE
DOCUMENT NUMBER: PubMed ID: 12834859
TITLE: Mechanism of action of **glycyrrhizic** acid in inhibition of **Epstein-Barr** virus replication in vitro.
AUTHOR: Lin Jung Chung
CORPORATE SOURCE: Department of Microbiology, College of Medicine, Tzu Chi University, 701 Section 3, Chung Yang Road, Hualien 970, Taiwan ROC.. jx18@mail.tcu.edu.tw
SOURCE: Antiviral research, (2003 Jun) Vol. 59, No. 1, pp. 41-7. Journal code: 8109699. ISSN: 0166-3542.
PUB. COUNTRY: Netherlands
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200310
ENTRY DATE: Entered STN: 20030702
Last Updated on STN: 20031024
Entered Medline: 20031023

AB We report here that glycyrrhizic acid (GL), a component of licorice root (Glycyrrhiza radix), is active against EBV replication in superinfected Raji cells in a dose-dependent fashion. The IC(50) values for viral inhibition and cell growth were 0.04 and 4.8mM, respectively. The selectivity index (ratio of IC(50) for cell growth to IC(50) for viral DNA synthesis) was 120. Time of addition experiments suggested that GL interferes with an early step of EBV replication cycle (possibly penetration). GL had no effect on viral adsorption, nor did it inactivate EBV particles. Thus, GL represents a new class of anti-EBV compounds with a mode of action different from that of the nucleoside analogs that inhibit viral DNA polymerase.

L1 ANSWER 17 OF 24 MEDLINE on STN
ACCESSION NUMBER: 2003128681 MEDLINE
DOCUMENT NUMBER: PubMed ID: 12608850
TITLE: Polyprenylated benzophenones from Garcinia assigu and their potential cancer chemopreventive activities.
AUTHOR: Ito Chihiro; Itoigawa Masataka; Miyamoto Yoshiaki; Onoda Saori; Rao K Sundar; Mukainaka Teruo; Tokuda Harukuni; Nishino Hoyoku; Furukawa Hiroshi
CORPORATE SOURCE: Faculty of Pharmacy, Meijo University, Tempaku, Nagoya 468-8503, Japan.. itoigawa@tokaigakuen-u.ac.jp
CONTRACT NUMBER: CA 17625 (NCI)
SOURCE: Journal of natural products, (2003 Feb) Vol. 66, No. 2, pp. 206-9.
Journal code: 7906882. ISSN: 0163-3864.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200307
ENTRY DATE: Entered STN: 20030320
Last Updated on STN: 20030708
Entered Medline: 20030707

AB In a further study on the chemical constituents of Garcinia assigu, two new benzophenones corresponding to the 13-O-methyl ethers (1 and 2) of the known isogarcinol and garcinol, respectively, were isolated and characterized, along with known benzophenones (3-6). Inhibitory effects of the benzophenones isolated from this plant on **Epstein-Barr** virus early antigen (EBV-EA) activation induced by 12-O-tetradecanoylphorbol-13-acetate (TPA) in Raji cells and their radical-scavenging ability against 1,1-diphenyl-2-picrylhydrazyl (DPPH) were demonstrated. The cyclized polyprenylbenzophenones (1-5) showed comparable or stronger potential cancer chemopreventive activity when

compared to **glycyrrhetic** acid, a known anti-tumor promoter.

L1 ANSWER 18 OF 24 MEDLINE on STN
ACCESSION NUMBER: 2002233297 MEDLINE
DOCUMENT NUMBER: PubMed ID: 11809525
TITLE: Constituents of Compositae plants III. Anti-tumor promoting effects and cytotoxic activity against human cancer cell lines of triterpene diols and triols from edible chrysanthemum flowers.
AUTHOR: Ukiya Motohiko; Akihisa Toshihiro; Tokuda Harukuni; Suzuki Hiroyuki; Mukainaka Teruo; Ichiishi Eiichiro; Yasukawa Ken; Kasahara Yoshimasa; Nishino Hoyoku
CORPORATE SOURCE: College of Science and Technology, Nihon University, 1-8 Kanda Surugadai, Chiyoda-ku, Tokyo 101-8308, Japan.
SOURCE: Cancer letters, (2002 Mar 8) Vol. 177, No. 1, pp. 7-12. Journal code: 7600053. ISSN: 0304-3835.
PUB. COUNTRY: Ireland
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200205
ENTRY DATE: Entered STN: 20020425
Last Updated on STN: 20020516
Entered Medline: 20020515

AB Fifteen pentacyclic triterpene diols and triols, consisting of: six taraxastanes, faradiol (1), heliantriol B0 (2), heliantriol C (3), 22alpha-methoxyfaradiol (4), arnidiol (5), and faradiol alpha-epoxide (6); five oleananes, maniladiol (7), erythrodiol (8), longispinogenin (9), coflodiol (10), and heliantriol A(1) (11); two ursanes, brein (12) and uvaol (13); and two lupanes, calenduladiol (14) and heliantriol B2 (15), isolated from the non-saponifiable lipid fraction of the edible flower extract of chrysanthemum (Chrysanthemum morifolium) were evaluated for their inhibitory effects on **Epstein-Barr** virus early antigen (EBV-EA) activation induced by the tumor promoter, 12-O-tetradecanoylphorbol-13-acetate, in Raji cells as a primary screening test for anti-tumor-promoters. All of the compounds tested showed inhibitory effects against EBV-EA activation with potencies either comparable with or stronger than that of **glycyrrhetic** acid, a known natural anti-tumor-promoter. Evaluation of the cytotoxic activity of six compounds, 1-3 and 5-7, against human cancer cell lines revealed that compound 5 possesses a wide range of cytotoxicity, with GI50 values (concentration that yields 50% growth) of mostly less than 6 microM.

L1 ANSWER 19 OF 24 MEDLINE on STN
ACCESSION NUMBER: 2001532135 MEDLINE
DOCUMENT NUMBER: PubMed ID: 11578803
TITLE: Anti-tumor promoting effects of multiflorane-type triterpenoids and cytotoxic activity of karounidiol against human cancer cell lines.
AUTHOR: Akihisa T; Tokuda H; Ichiishi E; Mukainaka T; Toriumi M; Ukiya M; Yasukawa K; Nishino H
CORPORATE SOURCE: College of Science and Technology, Nihon University, 1-8 Kanda Surugadai, Chiyoda-ku, Tokyo 101-8308, Japan.. akihisa@chem.cst.nihon-u.ac.jp
SOURCE: Cancer letters, (2001 Nov 8) Vol. 173, No. 1, pp. 9-14. Journal code: 7600053. ISSN: 0304-3835.
PUB. COUNTRY: Ireland
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200112
ENTRY DATE: Entered STN: 20011002
Last Updated on STN: 20020122
Entered Medline: 20011204

AB Forty-nine multiflorane-type triterpenoids consisting of 11 compounds isolated from the seeds of Trichosanthes kirilowii (Cucurbitaceae) and 38 of their derivatives have been evaluated for their inhibitory effects on **Epstein-Barr** virus early antigen (EBV-EA) activation induced by the tumor promoter 12-O-tetradecanoylphorbol-13-acetate in Raji cells as a primary screening test for anti-tumor promoters. All of the compounds tested showed an inhibitory effect against EBV-EA activation, and among which 43 were revealed to possess remarkable activity with potencies either comparable to or stronger than that of **glycyrrhetic** acid, a known natural anti-tumor promoter. Their structure-activity relationship is discussed. Evaluation of the cytotoxic activity of karounidiol (27) against human cancer cell lines exhibited cytotoxicity especially against a human renal cancer.

L1 ANSWER 20 OF 24 MEDLINE on STN
ACCESSION NUMBER: 95261351 MEDLINE
DOCUMENT NUMBER: PubMed ID: 7742800
TITLE: Inhibitors of skin-tumor promotion. XIII. Inhibitory effects of euglobals and their related compounds on Epstein-Barr virus activation and on two-stage carcinogenesis of mouse skin tumors. (2).
AUTHOR: Takasaki M; Konoshima T; Kozuka M; Yoneyama K; Yoshida S; Tokuda H; Nishino H; Iwashima A
CORPORATE SOURCE: Kyoto Pharmaceutical University, Kyoto, Japan.
SOURCE: Biological & pharmaceutical bulletin, (1995 Feb) Vol. 18, No. 2, pp. 288-94.
Journal code: 9311984. ISSN: 0918-6158.
PUB. COUNTRY: Japan
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199506
ENTRY DATE: Entered STN: 19950621
Last Updated on STN: 19950621
Entered Medline: 19950615

AB One hundred and fifteen synthesized mono, di, and trihydroxybenzamide and thiobenzamide derivatives having structures related to euglobals were examined for their inhibitory effects on **Epstein-Barr** virus (EBV) activation by 12-O-tetradecanoylphorbol-13-acetate (TPA) as a primary screening test for anti-tumor-promoters. In general, 3-acyl-2,4,6-trihydroxybenzamide and 3-acyl-2,4,6-trihydroxythiobenzamide derivatives exhibited strong or moderate activities, and the latter compounds were less cytotoxic than the former. Meanwhile, little or no activity was observed with mono and dihydroxybenzamide and dihydroxythiobenzamide derivatives. Structural requirements for the activities of these compounds have been discussed in detail. Among the above compounds, compounds 36 and 73, which were significantly active on the inhibition of EBV activation, were investigated using a two-stage mouse skin carcinogenesis test induced by 7,12-dimethylbenz[a]anthracene (DMBA) and TPA. The results of the in vivo test showed that both compounds have a stronger inhibitory effect than that of the well-known anti-tumor-promoter, **glycyrrhetic** acid. These results suggested that the two compounds might be valuable as anti-tumor-promoters in chemical carcinogenesis.

L1 ANSWER 21 OF 24 MEDLINE on STN
ACCESSION NUMBER: 93381131 MEDLINE
DOCUMENT NUMBER: PubMed ID: 8370836
TITLE: Repeat MRI in acute rhabdomyolysis: correlation with clinicopathological findings.
AUTHOR: Shintani S; Shiigai T
CORPORATE SOURCE: Department of Neurology, Toride Kyodo General Hospital, Ibaraki, Japan.
SOURCE: Journal of computer assisted tomography, (1993 Sep-Oct)

Vol. 17, No. 5, pp. 786-91.
Journal code: 7703942. ISSN: 0363-8715.
PUB. COUNTRY: United States
DOCUMENT TYPE: (CASE REPORTS)
Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199310
ENTRY DATE: Entered STN: 19931029
Last Updated on STN: 19931029
Entered Medline: 19931012

AB OBJECTIVE: Four cases of acute rhabdomyolysis are presented and the correlation between clinicopathological and MR findings is discussed. MATERIALS AND METHODS: The cases include carnitine palmitoyltransferase I deficiency presenting as compartment syndrome, acute polymyositis, acute myositis associated with **Epstein-Barr** virus infection, and **glycyrrhizin**- and diuretic-induced hypokalemic myopathy. RESULTS: The T2-weighted MR images revealed high intensity lesions in the affected muscle groups. The lesions seen on MR correlated precisely with the symptoms and neurological deficits of the patients. Repeat MR studies showed that the high intensity lesions seen on T2-weighted MR images resolved in parallel with the clinical course. CONCLUSION: This reversibility of the MR findings suggests that the high intensity lesions do not reflect permanent myopathic changes, but probably represent transient edema in the acute phase of rhabdomyolysis.

L1 ANSWER 22 OF 24 MEDLINE on STN
ACCESSION NUMBER: 86161439 MEDLINE
DOCUMENT NUMBER: PubMed ID: 3006912
TITLE: Search for possible antitumor promoters by inhibition of 12-O-tetradecanoylphorbol-13-acetate-induced Epstein-Barr virus activation; ursolic acid and oleanolic acid from an anti-inflammatory Chinese medicinal plant, Glechoma hederaceae L.
AUTHOR: Ohigashi H; Takamura H; Koshimizu K; Tokuda H; Ito Y
SOURCE: Cancer letters, (1986 Feb) Vol. 30, No. 2, pp. 143-51.
Journal code: 7600053. ISSN: 0304-3835.
PUB. COUNTRY: Netherlands
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 198605
ENTRY DATE: Entered STN: 19900321
Last Updated on STN: 19900321
Entered Medline: 19860508

AB From an anti-inflammatory Chinese medicinal plant, Glechoma hederaceae L., two triterpene carboxylic acids, ursolic acid (UA) and oleanolic acid (OA) have been isolated as inhibitors of 12-O-tetradecanoylphorbol-13-acetate (TPA) induced **Epstein-Barr** virus (EBV) activation in Raji cells. Both acids significantly inhibited the activation at a 1000-fold molar ratio to TPA, and also teleocidin B-4. The dose responses of the acids were very similar to those of the antitumor promoters, retinoic acid (RA) and **glycyrrhetinic** acid (GA). However, a characteristic property that UA and OA possess, far higher cell viability to the Raji cells than RA to the Raji cells, has been pointed out. Furthermore, enhancement of the inhibitory activity was found in 3-keto derivatives of UA and OA, while either loss of oxygen functionality at C-3 position of UA or oxidation at C-3 of GA led to reduction of the activity. Binding assay suggested that the inhibitory activity should be exhibited by some event caused after binding of TPA to the receptor in the cells.

L1 ANSWER 23 OF 24 MEDLINE on STN
ACCESSION NUMBER: 84055021 MEDLINE
DOCUMENT NUMBER: PubMed ID: 6315213

TITLE: Inhibition of 12-O-tetradecanoylphorbol-13-acetate-induced ornithine decarboxylase activity in mouse epidermis by sweetening agents and related compounds.
AUTHOR: Okamoto H; Yoshida D; Saito Y; Mizusaki S
SOURCE: Cancer letters, (1983 Nov) Vol. 21, No. 1, pp. 29-35. Journal code: 7600053. ISSN: 0304-3835.
PUB. COUNTRY: Netherlands
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 198401
ENTRY DATE: Entered STN: 19900319
Last Updated on STN: 19900319
Entered Medline: 19840107

AB The effects of naturally occurring sweetening agents, which inhibited the induction of **Epstein-Barr** virus-associated early antigen (EBV-EA) induced by 12-O-tetradecanoylphorbol-13-acetate (TPA), and related compounds on the induction of ornithine decarboxylase (ODC) by TPA is examined. Application of **glycyrrhetinic** acid or steviol to mouse skin 1 h before TPA treatment showed a remarkable decrease in TPA-induced ODC activity. Post-treatment with **glycyrrhetinic** acid or steviol 1 h after application of TPA also resulted in a considerable depression in the induction of ODC activity. Neither **glycyrrhetinic** acid nor steviol alone induced epidermal ODC activity. These results suggest that **glycyrrhetinic** acid and steviol interfere with the process of induction of epidermal ODC by TPA treatment of mouse skin. cis-Abienol, frullanolide and norambreinolide, which have a partially similar structure in the moiety with **glycyrrhetinic** acid or steviol, were tested. cis-Abienol and frullanolide showed an inhibitory effect when applied 1 h before TPA treatment, but norambreinolide was not effective. A relationship between suppression of ODC activity and inhibition of EBV-EA induction is discussed.

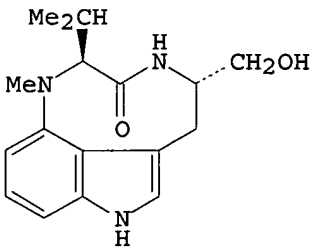
L1 ANSWER 24 OF 24 MEDLINE on STN
ACCESSION NUMBER: 83206473 MEDLINE
DOCUMENT NUMBER: PubMed ID: 6850568
TITLE: Inhibition of 12-O-tetradecanoylphorbol-13-acetate-induced induction in Epstein-Barr virus early antigen in Raji cells.
AUTHOR: Okamoto H; Yoshida D; Mizusaki S
SOURCE: Cancer letters, (1983 May) Vol. 19, No. 1, pp. 47-53. Journal code: 7600053. ISSN: 0304-3835.
PUB. COUNTRY: Netherlands
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 198307
ENTRY DATE: Entered STN: 19900319
Last Updated on STN: 19990129
Entered Medline: 19830729

AB Retinol, 5 flavonoids, 3 steroids and 7 sweetening agents were studied for their effects on 12-O-tetradecanoylphorbol-13-acetate (TPA)-induced early antigen (EA) of **Epstein-Barr** virus (EBV) in Raji cells. Concomitant treatment of Raji cells with TPA and retinol showed inhibition of EA induction. Among flavonoids, quercetin resulted in effective inhibition of EA induction by TPA and alpha-naphthoflavone showed the weakly inhibitory effect. None of the other flavonoids such as rutin, catechin and beta-naphthoflavone affected the induction of EBV-EA by TPA. beta-Estradiol obviously inhibited EBV-EA induction by TPA, but hydrocortisone did not show any inhibitory effect on it. **Glycyrrhetinic** acid, steviol, phyllodulcin and perrillartine also showed the remarkable inhibition of EBV-EA induction. On the other hand, **glycyrrhizin** and stevioside, glycosides of **glycyrrhetinic**

acid and steviol, did not inhibit the induction of EBV-EA by TPA. Some of the inhibitors reported here may be effective on the inhibition of the in vivo tumor promotion by TPA.

L2 ANSWER 60 OF 100 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1986:63422 CAPLUS
DOCUMENT NUMBER: 104:63422
TITLE: Epstein-Barr virus-activating and tumor-promoting natural products: their possible role in causation of Burkitt's lymphoma and nasopharyngeal carcinoma
AUTHOR(S): Ito, Yohei; Tokuda, Harukuni; Ohigashi, Hajime; Koshimizu, Koichi
CORPORATE SOURCE: Fac. Med., Kyoto Univ., Kyoto, 606, Japan
SOURCE: International Congress Series (1985), 667(Herpes Viruses Virus Chemother.), 179-84
CODEN: EXMDA4; ISSN: 0531-5131
DOCUMENT TYPE: Journal; General Review
LANGUAGE: English
AB A review with 15 refs. on the possibility that diterpene esters from plants, indole alkaloids from soil microbes, and other environmental factors are responsible for the frequent occurrence of 2 Epstein-Barr virus (EBV)-associated diseases, i.e., Burkitt's lymphoma and nasopharyngeal carcinoma, in southern provinces of China. An assay method based on the synergistic induction of EBV early antigen formation in human Raji cells as an indication of carcinogenic potential of naturally occurring compds. in the area where the 2 diseases are endemic was proposed.

L2 ANSWER 61 OF 100 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1986:16351 CAPLUS
DOCUMENT NUMBER: 104:16351
TITLE: Structure-activity relationship in the induction of Epstein-Barr virus by teleocidin derivatives
AUTHOR(S): Irie, Kazuhiro; Tokuda, Harukuni; Hagiwara, Nobuyuki; Koshimizu, Koichi; Hayashi, Hideo; Murao, Sawao; Ito, Yohei
CORPORATE SOURCE: Fac. Agric., Kyoto Univ., Kyoto, 606, Japan
SOURCE: International Journal of Cancer (1985), 36(4), 485-8
CODEN: IJCNAW; ISSN: 0020-7136
DOCUMENT TYPE: Journal
LANGUAGE: English
GI

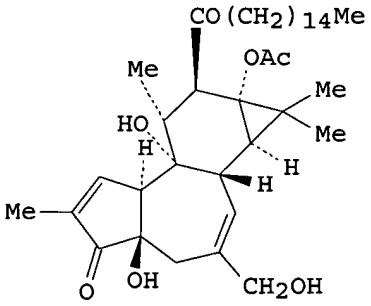


I

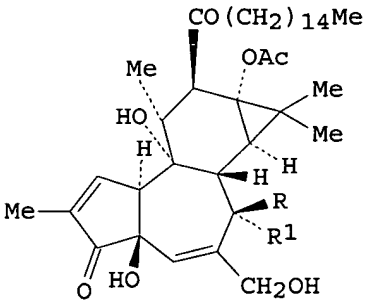
AB (-)-Indolactam V (I) [90365-57-4] and derivs. of I, which have the basic ring-structure of teleocidins without the **monoterpenoid** moiety, were studied for their **Epstein-Barr** virus early antigen (EBV-EA)-induced activity. (-)-14-O-Alkyl indolactam Vs showed little induction of EBV-EA, whereas (-)-14-dehydroxyindolactam V and (-)-14-chloroindolactam V [99423-87-7] proved to be potent EBV-EA inducers, though their activities (EC50) were .apprx.10 times weaker than that of I. These results indicate that the hydroxyl group at C-14 is not indispensable for EBV-EA induction and can be replaced. The activities (EC50) of (-)-1-N-Me [99414-59-2], (-)-1-N-Et [99414-60-5], and

(-)-1-N-Bu indolactam V [99442-64-5] were .apprx.5 times weaker than that of I whereas (-)-1-N-hexyl [99414-61-6] and (-)-1-N-octyl indolactam V [99414-62-7] were even less active, suggesting that the free imino group of the indole ring in I plays an important role in the activity, and that the activity cannot be enhanced by alkylation at the N-1 position of I.

L2 ANSWER 62 OF 100 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1983:517577 CAPLUS
DOCUMENT NUMBER: 99:117577
TITLE: Tigliane type diterpene-esters with Epstein-Barr virus-inducing activity from Sapium sebiferum
AUTHOR(S): Ohigashi, Hajime; Ohtsuka, Takanao; Hirota, Mitsuru; Koshimizu, Koichi; Tokuda, Harukuni; Ito, Yohei
CORPORATE SOURCE: Dep. Food Sci. Technol., Kyoto Univ., Kyoto, 606, Japan
SOURCE: Agricultural and Biological Chemistry (1983), 47(7), 1617-22
CODEN: ABCHA6; ISSN: 0002-1369
DOCUMENT TYPE: Journal
LANGUAGE: English
GI



I



II, R=O2H, R1=H
III, RR1=O

AB Three Epstein-Barr virus activating principles were isolated from the leaves of S. sebiferum. By chemical and spectroscopic evidence they were identified as tigliane type diterpene esters with structures of (I) [87084-56-8], (II) [87084-57-9], and (III) [87084-58-0]. I and II strongly induced an early antigen of the virus in a Raji cell, whereas III did so weakly. The activity of some derivs. of II are also discussed.

L2 ANSWER 63 OF 100 MEDLINE on STN
ACCESSION NUMBER: 2005042922 MEDLINE
DOCUMENT NUMBER: PubMed ID: 15670948
TITLE: Cancer preventive agents. Part 1: chemopreventive potential of cimigenol, cimigenol-3,15-dione, and related compounds.
AUTHOR: Sakurai Nobuko; Kozuka Mutsuo; Tokuda Harukuni; Mukainaka

Teruo; Enjo Fumio; Nishino Hoyoku; Nagai Masahiro; Sakurai Yojiro; Lee Kuo-Hsiung
CORPORATE SOURCE: Natural Products Laboratory, School of Pharmacy, University of North Carolina, Chapel Hill, NC 27599-7360, USA.
CONTRACT NUMBER: CA 17625 (NCI)
SOURCE: Bioorganic & medicinal chemistry, (2005 Feb 15) Vol. 13, No. 4, pp. 1403-8.
Journal code: 9413298. ISSN: 0968-0896.
PUB. COUNTRY: England: United Kingdom
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200508
ENTRY DATE: Entered STN: 20050127
Last Updated on STN: 20050803
Entered Medline: 20050802

AB In continuation of our previous report, cimigenol (1) and 15 related compounds were screened as potential antitumor promoters by using the in vitro short-term 12-O-tetradecanoylphorbol-13-acetate (TPA)--induced **Epstein-Barr** virus early antigen (EBV-EA) activation assay. Cimigenol-3,15-dione (2) displayed the greatest potency (100% inhibition at 1000 mol ratio/TPA) and consequently was further examined for antitumor-promoting activity in a two-stage carcinogenesis assay of mouse skin tumors (DMBA/TPA). In this assay, compound 2 showed significant activity, reducing the number of papillomas per mouse to 48% of the control group at 20 weeks. In addition, compounds 1 and 2 were examined for antitumor-initiating activity in a two-stage carcinogenesis assay of mouse skin tumors induced by peroxynitrite as an initiator and TPA as a promoter. Results showed that these two **triterpenoids** were almost equipotent with epigallocatechin gallate (EGCG) and slightly more potent than tocinol (group V), the positive controls. Thus, compounds 1 and 2 exhibited not only strong antitumor-promoting activity but also significant antitumor-initiating effect on mouse skin. These data suggest that both compounds might be valuable chemopreventors.

L2 ANSWER 64 OF 100 MEDLINE on STN
ACCESSION NUMBER: 2005017579 MEDLINE
DOCUMENT NUMBER: PubMed ID: 15643564
TITLE: Potential anti-tumor promoting activity of lupane-type triterpenoids from the stem bark of Glochidion zeylanicum and Phyllanthus flexuosus.
AUTHOR: Tanaka Reiko; Kinouchi Yoshitaka; Wada Shun-ichi; Tokuda Harukuni
CORPORATE SOURCE: Department of Medicinal Chemistry, Osaka University of Pharmaceutical Sciences, Osaka, Japan.. tanakar@gly.oups.ac.jp
SOURCE: Planta medica, (2004 Dec) Vol. 70, No. 12, pp. 1234-6.
Journal code: 0066751. ISSN: 0032-0943.
PUB. COUNTRY: Germany: Germany, Federal Republic of
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200503
ENTRY DATE: Entered STN: 20050112
Last Updated on STN: 20050331
Entered Medline: 20050330

AB Four known lupane-type **triterpenoids**, glochidonol (1), glochidiol (2), lup-20(29)-ene-1beta,3beta-diol (3) and glochidone (3) were isolated from the stem bark of Glochidion zeylanicum. Previously, lupeol (5), lup-20(29)-ene-3beta,24-diol (6) and betulin (7) were isolated from the stem bark of Phyllanthus flexuosus. This study reports the assays of these lupane-type **triterpenoids**: all isolates 1-7 and synthetic analogues, glochidonyl acetate (1a), lup-20(29)-ene-1,3-dione (1b) and lup-20(29)-ene 3beta,24-diacetate (6a) were tested for their

inhibitory effects on **Epstein-Barr** virus early antigen (EBV-EA) activation induced by 12-O-tetradecanoylphorbol 13-acetate (TPA). Among them, the effects of compounds 2 (IC50 = 290 mol ratio/32 pmol TPA) and 3 (IC50 = 300) were stronger than the others. In addition, compound 2 exhibited a strong inhibitory effect on mouse skin tumor promotion in an in vivo mouse two-stage carcinogenesis test.

L2 ANSWER 65 OF 100 MEDLINE on STN
ACCESSION NUMBER: 2004528924 MEDLINE
DOCUMENT NUMBER: PubMed ID: 15503357
TITLE: A new seco-abietane-type diterpene from the stem bark of Picea glehni.
AUTHOR: Tanaka Reiko; Wada Shun-ichi; Kinouchi Yoshitaka; Tokuda Harukuni; Matsunaga Shunyo
SOURCE: Planta medica, (2004 Sep) Vol. 70, No. 9, pp. 877-80. Journal code: 0066751. ISSN: 0032-0943.
PUB. COUNTRY: Germany: Germany, Federal Republic of
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200412
ENTRY DATE: Entered STN: 20041026
Last Updated on STN: 20041220
Entered Medline: 20041210

AB A new seco-abietane-type **diterpenoid**, 13S-hydroxy-9-oxo-9,10-seco-abiet-8(14)-en-18,10alpha-olide (1) along with a known lignan compound, pinoresinol (2) was isolated from the stem bark of Picea glehni (Fr. Schm.) Masters. Spectroscopic methods and chemical conversions were used to establish the structure of 1. In order to assess their cancer chemopreventive potential, the inhibition of **Epstein-Barr** virus early antigen (EBV-EA) activation induced by 12-O-tetradecanoylphorbol 13-acetate (TPA) was examined for compound 1, its synthetic analogue, 9,10-seco-8S,13S-epoxy-abiet-8(14)-en-18,10alpha-olide (1a) and 2. The inhibitory effect of 1a on EBV-EA induction was strong (0, 20.7, 67.1 and 89.2 % inhibition at 1000, 500,100 and 10 mol ratio/TPA). The IC50 of 1a was 226 mol ratio/32 pmol/TPA.

L2 ANSWER 66 OF 100 MEDLINE on STN
ACCESSION NUMBER: 2004455415 MEDLINE
DOCUMENT NUMBER: PubMed ID: 15363540
TITLE: Cancer chemopreventive activity of 3beta-methoxyserrat-14-en-21beta-ol and several serratane analogs on two-stage mouse skin carcinogenesis.
AUTHOR: Tanaka Reiko; Shanmugasundaram Kandasamy; Yamaguchi Chiharu; Ishikawa Yohei; Tokuda Harukuni; Nishide Kiyoharu; Node Manabu
CORPORATE SOURCE: Department of Medicinal Chemistry, Osaka University of Pharmaceutical Sciences, 4-20-1 Nasahara, Takatsuki, Osaka 569-1094, Japan.. tanakar@gly.oups.ac.jp
SOURCE: Cancer letters, (2004 Oct 28) Vol. 214, No. 2, pp. 149-56. Journal code: 7600053. ISSN: 0304-3835.
PUB. COUNTRY: Ireland
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200411
ENTRY DATE: Entered STN: 20040915
Last Updated on STN: 20041110
Entered Medline: 20041109

AB 3beta-Methoxyserrat-14-en-21beta-ol (1) and 3alpha-methoxyserrat-14-en-21beta-ol (2) are the most abundant **triterpenoids** from two Picea plants, Picea jezoensis (Sieb. et Zucc.) Carr. var. jezoensis and P. jezoensis (Sieb. et Zucc.) Carr. hondoensis (Mayr) Rehder, and the total yield of 1 and 2 reach over 1/3 of the chloroform extract of the above two

plants. This study deals with the potential of anti-tumor promoting activity of 1 and results of the assay of 22 synthetic serratane-type **triterpenoids** (6)-(27) derived from 1, 2, 21-episerratenediol (3), diepiserratenediol (4) and 13alpha,14alpha-epoxy-3beta-methoxyserratan-21beta-ol (5) to discuss the structure-activity relationship. As a preliminary evaluation of their potential to inhibit tumor promotion, the inhibitory effects on **Epstein-Barr** virus early antigen (EBV-EA) activation induced by 12-O-tetradecanoylphorbol-13-acetate (TPA) were used. All compounds except for 12 and 19 showed potent inhibitory effects on EBV-EA induction (100% inhibition at 1000 mol ratio/TPA), their effects being stronger than that of a positive control oleanolic acid. Compounds 1, 13, 14, 18, 20 and 26 were selected to examine the effect on the in vivo two-stage mouse skin carcinogenesis test induced by 7,12-dimethylbenz[a]anthracene (DMBA) as an initiator and TPA as a promoter. The most abundant **triterpenoid** 1 and the synthetic compounds 13 and 14 were found to exhibit the excellent anti-tumor promoting activity in the in vivo carcinogenesis test, and compounds 18, 20 and 26 also showed strong inhibitory effects.

L2 ANSWER 67 OF 100 MEDLINE on STN
ACCESSION NUMBER: 2004183857 MEDLINE
DOCUMENT NUMBER: PubMed ID: 15043419
TITLE: Microbial transformation of isosteviol and inhibitory effects on Epstein-Barr virus activation of the transformation products.
AUTHOR: Akihisa Toshihiro; Hamasaki Yusuke; Tokuda Harukuni; Ukiya Motohiko; Kimura Yumiko; Nishino Hoyoku
CORPORATE SOURCE: College of Science and Technology, Nihon University, 1-8 Kanda Surugdai, Chiyoda-ku, Tokyo 101-8308, Japan.. akihisa@chem.cst.nihon-u.ac.jp
CONTRACT NUMBER: CA 177625 (NCI)
SOURCE: Journal of natural products, (2004 Mar) Vol. 67, No. 3, pp. 407-10.
Journal code: 7906882. ISSN: 0163-3864.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200405
ENTRY DATE: Entered STN: 20040415
Last Updated on STN: 20040515
Entered Medline: 20040514

AB Microbial transformation of isosteviol (2), a beyerane-type **diterpenoid** obtained from stevioside (1) by acid hydrolysis, yielded 7beta-hydroxyisosteviol (3), 11beta-hydroxyisosteviol (5), and 12beta-hydroxyisosteviol (6) by the fungus Aspergillus niger, 17-hydroxyisosteviol (7) by the fungus Glomerella cingulata, and 3 and 7-oxoisosteviol (4) by the fungus Mortierella elongate. The five metabolites, 3-7, along with 1 and 2 were evaluated for their inhibitory effects on **Epstein-Barr** virus early antigen (EBV-EA) activation induced by the tumor promoter 12-O-tetradecanoylphorbol-13-acetate (TPA) in Raji cells as a primary screening test for inhibitors of tumor promoters. All the diterpenes tested showed potent inhibitory effects, with the five metabolites 3-7 exhibiting more potent effects.

L2 ANSWER 68 OF 100 MEDLINE on STN
ACCESSION NUMBER: 2004035351 MEDLINE
DOCUMENT NUMBER: PubMed ID: 14735444
TITLE: Two new anti-tumor promoting serratane-type triterpenoids from the stem bark of Picea jezoensis var. jezoensis.
AUTHOR: Tanaka Reiko; Ishikawa Yohei; Minami Toshifumi; Minoura Katsuhiko; Tokuda Harukuni; Matsunaga Shunyo
CORPORATE SOURCE: Department of Medicinal Chemistry, Osaka University of Pharmaceutical Sciences, Osaka, Japan..

tanakar@gly.oups.ac.jp
SOURCE: Planta medica, (2003 Nov) Vol. 69, No. 11, pp. 1041-7.
Journal code: 0066751. ISSN: 0032-0943.
PUB. COUNTRY: Germany: Germany, Federal Republic of
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200402
ENTRY DATE: Entered STN: 20040122
Last Updated on STN: 20040211
Entered Medline: 20040210

AB Two new serratane-type **triterpenoids**, 1 and 2, were isolated from the stem bark of Picea jezoensis Carr. var. jezoensis (Pinaceae). Their structures were determined to be 3beta-methoxyserrat-13-en-21beta-ol (1) and 13beta, 14beta-epoxy-3beta-methoxyserratan-21beta-ol (2) on the basis of spectroscopic methods and partial syntheses. Compounds 1 and 2 and their acetates were screened as potential anti-tumor promoters by using the in vitro short-term 12-O-tetradecanoylphorbol 13-acetate (TPA)-induced **Epstein-Barr** virus early antigen (EBV-EA) activation assay. IC50 value evaluation showed that compound 1 was more effective than others. In addition, compounds 1 and 2 were examined for anti-tumor promoting activities in a two-stage carcinogenesis assay of mouse skin tumors induced by 7,12-dimethylbenz[a]anthracene (DMBA) as an initiator and TPA as a promoter. Compounds 1 and 2 exhibited significant anti-tumor promoting effects on mouse skin carcinogenesis.

L2 ANSWER 69 OF 100 MEDLINE on STN
ACCESSION NUMBER: 2004024116 MEDLINE
DOCUMENT NUMBER: PubMed ID: 14695801
TITLE: Lucidenic acids P and Q, methyl lucidenate P, and other **triterpenoids** from the fungus Ganoderma lucidum and their inhibitory effects on **Epstein-Barr** virus activation.
AUTHOR: Iwatsuki Kenji; Akihisa Toshihiro; Tokuda Harukuni; Ukiya Motohiko; Oshikubo Manabu; Kimura Yumiko; Asano Takeshi; Nomura Atsushi; Nishino Hoyoku
CORPORATE SOURCE: K-Laboratories for Intelligent Medical Remote Services, 2266-22 Anagahora, Shimoshidami, Moriyama-ku, Nagoya 463-0003, Japan.
CONTRACT NUMBER: CA177625 (NCI)
SOURCE: Journal of natural products, (2003 Dec) Vol. 66, No. 12, pp. 1582-5.
Journal code: 7906882. ISSN: 0163-3864.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200403
ENTRY DATE: Entered STN: 20040116
Last Updated on STN: 20040326
Entered Medline: 20040325

AB A new triterpene acid, lucidenic acid P (1a), and two new triterpene acid methyl esters, methyl lucidenates P (1b) and Q (2b), were isolated and characterized from the fruiting body of the fungus Ganoderma lucidum. Their structures were elucidated on the basis of spectroscopic methods. In addition, eight known triterpene acids, lucidenic acids A (3a), C (4a), D(2) (5a), E(2) (6a), and F (7a) and ganoderic acids E (9a), F (10a), and T-Q (11a), and six known triterpene acid methyl esters, methyl lucidenates A (3b), D(2) (5b), E(2) (6b), F (7b), and L (8b) and methyl ganoderate F (10b), were isolated and identified from the fungus. All of the **triterpenoids**, with the exception of 7a, were evaluated with respect to their inhibitory effects on the induction of **Epstein-Barr** virus early antigen (EBV-EA) by 12-O-tetradecanoylphorbol-13-acetate (TPA) in Raji cells, which is known to be a primary screening test

for antitumor promoters. All of the compounds tested showed potent inhibitory effects on EBV-EA induction (96-100% inhibition at 1 x 10(3) mol ratio/TPA).

L2 ANSWER 70 OF 100 MEDLINE on STN
ACCESSION NUMBER: 2004012278 MEDLINE
DOCUMENT NUMBER: PubMed ID: 14709887
TITLE: 3-epicabraleahydroxylactone and other **triterpenoids** from camellia oil and their inhibitory effects on **Epstein-Barr** virus activation.
AUTHOR: Akihisa Toshihiro; Tokuda Harukuni; Ukiya Motohiko; Suzuki Toshie; Enjo Fumio; Koike Kazuo; Nikaido Tamotsu; Nishino Hoyoku
CORPORATE SOURCE: College of Science and Technology, Nihon University, 1-8 Kanda Surugadai, Chiyoda-ku, Tokyo 101-8308, Japan.. akihisa@chem.cst.nihon-u.ac.jp
CONTRACT NUMBER: CA 17625 (NCI)
SOURCE: Chemical & pharmaceutical bulletin, (2004 Jan) Vol. 52, No. 1, pp. 153-6.
Journal code: 0377775. ISSN: 0009-2363.
PUB. COUNTRY: Japan
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200408
ENTRY DATE: Entered STN: 20040108
Last Updated on STN: 20040814
Entered Medline: 20040813
AB The structure of a **triterpenoid** isolated from the nonsaponifiable lipid (NSL) of the seed oil of the camellia (Camellia japonica L.; Theaceae) was established to be (20S)-3beta-hydroxy-25,26,27-trisnordammaran-24,20-olide (1; 3-epicabraleahydroxylactone) on the basis of spectroscopic and chemical methods. Six other **triterpenoids** isolated from the NSL were identified as 3-epicabraleadiol (2), ocotillol II (3), ocotillol I (4), dammarenediol II (5), (20R)-taraxastane-3beta,20-diol (6), and lupane-3beta,20-diol (7). Upon evaluation of the seven **triterpenoids** (1-7) with respect to their inhibitory effects on the induction of **Epstein-Barr** virus early antigen (EBV-EA) by 12-O-tetradecanoylphorbol-13-acetate (TPA) in Raji cells, three compounds (5-7) showed potent inhibitory effects against EBV-EA induction (IC(50) values of 277-420 mol ratio/32 pmol TPA).

L2 ANSWER 71 OF 100 MEDLINE on STN
ACCESSION NUMBER: 2003590384 MEDLINE
DOCUMENT NUMBER: PubMed ID: 14640522
TITLE: Sunpollenol and five other rearranged 3,4-seco-tirucallane-type **triterpenoids** from sunflower pollen and their inhibitory effects on **Epstein-Barr** virus activation.
AUTHOR: Ukiya Motohiko; Akihisa Toshihiro; Tokuda Harukuni; Koike Kazuo; Kimura Yumiko; Asano Takeshi; Motohashi Shigeyasu; Nikaido Tamotsu; Nishino Hoyoku
CORPORATE SOURCE: College of Science and Technology, Nihon University, 1-8 Kanda Surugadai, Chiyoda-ku, Tokyo 101-8308, Japan.
CONTRACT NUMBER: CA 17625 (NCI)
SOURCE: Journal of natural products, (2003 Nov) Vol. 66, No. 11, pp. 1476-9.
Journal code: 7906882. ISSN: 0163-3864.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200403
ENTRY DATE: Entered STN: 20031216

Last Updated on STN: 20040312
Entered Medline: 20040311

AB Six new rearranged 3,4-seco-tirucallane-type **triterpenoids** (1-6) have been isolated from the diethyl ether extract of the pollen grains of sunflower (Helianthus annuus). These compounds were evaluated with respect to their inhibitory effects on the induction of **Epstein-Barr** virus early antigen (EBV-EA) induced by the tumor promoter 12-O-tetradecanoylphorbol 13-acetate (TPA) in Raji cells. All of the compounds tested showed potent inhibitory effects on EBV-EA activation (97-100% inhibition at 1 x 10(3) mol ratio/TPA).

L2 ANSWER 72 OF 100 MEDLINE on STN
ACCESSION NUMBER: 2003414053 MEDLINE
DOCUMENT NUMBER: PubMed ID: 12932121
TITLE: Absolute configuration of sesquiterpenes from Crossopetalum tonduzii and their inhibitory effects on Epstein-Barr virus early antigen activation in Raji cells.
AUTHOR: Jimenez Ignacio A; Bazzocchi Isabel L; Nunez Marvin J; Mukainaka Teruo; Tokuda Harukuni; Nishino Hoyoku; Konoshima Takao; Ravelo Angel G
CORPORATE SOURCE: Instituto Universitario de Bio-Organica Antonio Gonzalez, Universidad de La Laguna, Avenida Astrofisico Francisco Sanchez 2, La Laguna, 38206 Tenerife, Canary Islands, Spain.
SOURCE: Journal of natural products, (2003 Aug) Vol. 66, No. 8, pp. 1047-50.
Journal code: 7906882. ISSN: 0163-3864.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200312
ENTRY DATE: Entered STN: 20030905
Last Updated on STN: 20031225
Entered Medline: 20031224

AB Two new **sesquiterpenoids** (1 and 2) with a dihydro-beta-agarofuran skeleton were isolated from Crossopetalum tonduzii. Their structures were elucidated on the basis of spectral analysis, including homonuclear and heteronuclear correlation NMR experiments (COSY, ROESY, HSQC, and HMBC). Their absolute configurations were determined by CD studies on 3, the benzoylated derivative of 1. Chemical correlations have allowed the absolute configurations of 4 and 5, two previously known dihydro-beta-agarofuran analogues, to be reported for the first time. Compounds 1, 2, and 5 showed strong antitumor-promoting effects on **Epstein-Barr** virus early antigen (EBV-EA) activation.

L2 ANSWER 73 OF 100 MEDLINE on STN
ACCESSION NUMBER: 2003411262 MEDLINE
DOCUMENT NUMBER: PubMed ID: 12951486
TITLE: Ichthyotoxic and anticarcinogenic effects of triterpenoids from Sandoricum koetjape bark.
AUTHOR: Ismail Intan Safinar; Ito Hideyuki; Mukainaka Teruo; Higashihara Hiroshi; Enjo Fumio; Tokuda Harukuni; Nishino Hoyoku; Yoshida Takashi
CORPORATE SOURCE: Faculty of Pharmaceutical Sciences, Okayama University, Okayama, Japan.
SOURCE: Biological & pharmaceutical bulletin, (2003 Sep) Vol. 26, No. 9, pp. 1351-3.
Journal code: 9311984. ISSN: 0918-6158.
PUB. COUNTRY: Japan
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200404

ENTRY DATE: Entered STN: 20030903
Last Updated on STN: 20040410
Entered Medline: 20040409

AB After bioassay-guided fractionation of the extract from Sandoricum koetjape bark, which exhibited significant toxicity to killifish (Oryzias latipes), two ichthyotoxic **triterpenoids** were isolated and characterized as koetjapic acid and 3-oxo-olean-12-en-29-oic acid. These constituents, along with non-toxic katonic acid, had a remarkable inhibitory effect on **Epstein-Barr** virus early antigen (EBV-EA) activation induced by 12-O-tetradecanoylphorbol 13-acetate (TPA), which is a preliminary in vitro screening method for possible anti-tumor-promoting agents. Of the **triterpenoids** active in vitro, koetjapic acid appears to be a promising cancer chemopreventive agent, since it significantly delayed tumor promotion in two-stage mouse skin carcinogenesis induced by 7,12-dimethylbenz(a)anthracene and promoted by TPA.

L2 ANSWER 74 OF 100 MEDLINE on STN
ACCESSION NUMBER: 2003360271 MEDLINE
DOCUMENT NUMBER: PubMed ID: 12893428
TITLE: Anticarcinogenic activity of natural sweeteners, cucurbitane glycosides, from Momordica grosvenori.
AUTHOR: Takasaki Midori; Konoshima Takao; Murata Yuji; Sugiura Masaki; Nishino Hoyoku; Tokuda Harukuni; Matsumoto Kazuhiro; Kasai Ryoji; Yamasaki Kazuo
CORPORATE SOURCE: Kyoto Pharmaceutical University, Misasagi, Yamashina-ku, Kyoto 607-8414, Japan.. midori@mb.kyoto-phu.ac.jp
SOURCE: Cancer letters, (2003 Jul 30) Vol. 198, No. 1, pp. 37-42. Journal code: 7600053. ISSN: 0304-3835.
PUB. COUNTRY: Ireland
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200310
ENTRY DATE: Entered STN: 20030802
Last Updated on STN: 20031024
Entered Medline: 20031023

AB To search for cancer chemopreventive agents from natural resources, many phytochemicals and food additives have been screened. Consequently, two natural sweeteners, mogroside V and 11-oxo-mogroside V isolated from the fruits of Momordica grosvenori, exhibited strong inhibitory effect on the primary screening test indicated by the induction of **Epstein-Barr** virus early antigen (EBV-EA) by a tumor promoter, 12-O-tetradecanoylphorbol-13-acetate (TPA). These sweet glycosides, having cucurbitane **triterpenoid** aglycon, exhibited the significant inhibitory effects on the two-stage carcinogenesis test of mouse skin tumors induced by peroxynitrite (ONOO-) as an initiator and TPA as a promoter. Further, 11-oxo-mogroside V also exhibited the remarkable inhibitory effect on two-stage carcinogenesis test of mouse skin tumor induced by 7,12-dimethylbenz[a]anthracene (DMBA) as an initiator and TPA as a promoter.

L2 ANSWER 75 OF 100 MEDLINE on STN
ACCESSION NUMBER: 2003330383 MEDLINE
DOCUMENT NUMBER: PubMed ID: 12860269
TITLE: Cancer chemopreventive activity of serratane-type triterpenoids on two-stage mouse skin carcinogenesis.
AUTHOR: Tanaka Reiko; Minami Toshifumi; Ishikawa Yohei; Matsunaga Shunyo; Tokuda Harukuni; Nishino Hoyoku
CORPORATE SOURCE: Department of Medicinal Chemistry, Osaka University of Pharmaceutical Sciences, 4-20-1 Nasahara, Takatsuki, Osaka 569-1094, Japan.. tanakar@oysun01.oups.ac.jp
SOURCE: Cancer letters, (2003 Jul 10) Vol. 196, No. 2, pp. 121-6. Journal code: 7600053. ISSN: 0304-3835.

PUB. COUNTRY: Ireland
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200308
ENTRY DATE: Entered STN: 20030716
Last Updated on STN: 20030821
Entered Medline: 20030820

AB Eleven serratane-type **triterpenoids** isolated from the stem bark of Picea jezoensis (Sieb. et Zucc.) Carr. var. jezoensis (Pinaceae) and the stem bark of Picea jezoensis (Sieb. et Zucc.) Carr. var. hondoensis (Mayer) Rehder (Pinaceae) and three synthetic analogs were studied for their possible inhibitory effects on **Epstein-Barr** virus early antigen (EBV-EA) activation induced by 12-O-tetradecanoylphorbol-13-acetate (TPA). 21-Episerratenediol, serratenediol, diepiserratenediol, 3 beta-hydroxyserrat-14-en-21-one, 3 alpha-methoxy-21 beta-hydroxyserrat-14-en-16-one, 3 beta-methoxyserrat-14-en-21 beta-yl acetate, 3 alpha-methoxyserrat-14-en-21 beta-yl acetate and 3 beta-methoxyserrat-14-en-21 alpha-yl acetate demonstrated strong inhibitory effects on the EBV-EA activation without showing any cytotoxicity, their effects being stronger than that of a representative control, oleanolic acid. Furthermore, 21-episerratenediol exhibited a remarkable inhibitory effect on skin tumor promotion in an in vivo two-stage mouse skin carcinogenesis test using 7,12-dimethylbenz[a]anthracene as an initiator and TPA as a promoter. The result of the present investigation indicated that 21-episerratenediol might be valuable as a potent cancer chemopreventive agent.

L2 ANSWER 76 OF 100 MEDLINE on STN
ACCESSION NUMBER: 2003232435 MEDLINE
DOCUMENT NUMBER: PubMed ID: 12720376
TITLE: Isolation, structural elucidation, and inhibitory effects of **terpenoid** and lipid constituents from sunflower pollen on **Epstein-Barr** virus early antigen induced by tumor promoter, TPA.
AUTHOR: Ukiya Motohiko; Akihisa Toshihiro; Tokuda Harukuni; Koike Kazuo; Takayasu Junko; Okuda Hiroki; Kimura Yumiko; Nikaido Tamotsu; Nishino Hoyoku
CORPORATE SOURCE: College of Science and Technology, Nihon University, 1-8 Kanda Surugadai, Chiyoda-ku, Tokyo 101-8308, Japan.
CONTRACT NUMBER: CA 17625 (NCI)
SOURCE: Journal of agricultural and food chemistry, (2003 May 7) Vol. 51, No. 10, pp. 2949-57.
Journal code: 0374755. ISSN: 0021-8561.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200306
ENTRY DATE: Entered STN: 20030521
Last Updated on STN: 20030617
Entered Medline: 20030616

AB Eight fatty acid esters of triterpene alcohols (1-8), four free triterpene alcohols (9, 12, 17, and 18), four diterpene acids (19-22), two tocopherol-related compounds (23 and 24), four estolides (25-28), three syn-alkane-4,6-diols (29-31), one 1,3-dioxoalkanoic acid (32), and one aliphatic ketone (33), along with the mixture of free fatty acids, were isolated from the diethyl ether extract of the pollen grains of sunflower (Helianthus annuus). Among these compounds, 14 (2-8, 12, 23, 25-28, and 33) were new naturally occurring compounds, and their structures were determined on the basis of spectroscopic methods. Twenty-four **terpenoids** and lipids (1-4, 6-9, 12, and 19-33) and six free triterpene triols (10, 11, and 13-16), derived from their fatty acid esters (2, 3, and 5-8) by alkaline hydrolysis, were evaluated with respect

to their inhibitory effects on the induction of **Epstein-Barr** virus early antigen (EBV-EA) induced by the tumor promoter, 12-O-tetradecanoylphorbol-13-acetate (TPA), in Raji cells, which is known to be a primary screening test for antitumor promoters. Among the 30 compounds tested, 21 compounds possessing a di- or a polycyclic ring system in the molecule (1-4, 6-16, and 19-24) showed potent inhibitory effects on EBV-EA induction (91-100% inhibition at 1 x 10(3) mol ratio/TPA).

L2 ANSWER 77 OF 100 MEDLINE on STN
ACCESSION NUMBER: 2003128680 MEDLINE
DOCUMENT NUMBER: PubMed ID: 12608849
TITLE: Chemical constituents of Garcinia fusca: structure elucidation of eight new xanthones and their cancer chemopreventive activity.
AUTHOR: Ito Chihiro; Itoigawa Masataka; Takakura Tomoko; Ruangrungsi Nijisiri; Enjo Fumio; Tokuda Harukuni; Nishino Hoyoku; Furukawa Hiroshi
CORPORATE SOURCE: Faculty of Pharmacy, Meijo University, Tempaku, Nagoya 468-8503, Japan.
SOURCE: Journal of natural products, (2003 Feb) Vol. 66, No. 2, pp. 200-5.
Journal code: 7906882. ISSN: 0163-3864.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200307
ENTRY DATE: Entered STN: 20030320
Last Updated on STN: 20030708
Entered Medline: 20030707
AB We describe the isolation and spectrometric structure elucidation of eight new xanthones, fuscaxanthone A (1), B (2), C (3), D (4), E (5), F (6), G (7), and H (8), together with eight known xanthones from the stem bark of Garcinia fusca collected in Thailand. All the new xanthones were shown to have a **terpenoid** (prenyl and/or geranyl) side chain(s) in their molecules. We also present the results of a primary screening of the inhibitory effects of eight xanthones (9-16) isolated as major components of this plant on 12-O-tetradecanoylphorbol-13-acetate induced **Epstein-Barr** virus early antigen activation in Raji cells.

L2 ANSWER 78 OF 100 MEDLINE on STN
ACCESSION NUMBER: 2002669847 MEDLINE
DOCUMENT NUMBER: PubMed ID: 12405766
TITLE: Inhibitory effects of cucurbitane glycosides and other **triterpenoids** from the fruit of Momordica grosvenori on **epstein-barr** virus early antigen induced by tumor promoter 12-O-tetradecanoylphorbol-13-acetate.
AUTHOR: Ukiya Motohiko; Akihisa Toshihiro; Tokuda Harukuni; Toriumi Masakazu; Mukainaka Teruo; Banno Norihiro; Kimura Yumiko; Hasegawa Jun-Ichi; Nishino Hoyoku
CORPORATE SOURCE: College of Science and Technology, Nihon University, 1-8 Kanda Surugadai, Chiyoda-ku, Tokyo 101-8308, Japan.
SOURCE: Journal of agricultural and food chemistry, (2002 Nov 6) Vol. 50, No. 23, pp. 6710-5.
Journal code: 0374755. ISSN: 0021-8561.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200212
ENTRY DATE: Entered STN: 20021115

Last Updated on STN: 20021227
Entered Medline: 20021226

AB Two new triterpene benzoates, 5-dehydrokarounidiol dibenzoate (1) and karounidiol dibenzoate (2), and two new triterpene glycosides, 5alpha,6alpha-epoxymogroside IE(1) (8) and 11-oxomogroside A(1) (9), along with 15 known **triterpenoids** (one triterpene benzoate, 3; three triterpene mono-ols, 4-6; one triterpene aglycon, 7; and 10 triterpene glycosides, 10-19), were isolated from the ethanol extract of the fruit of Momordica grosvenori. The structures of 1, 2, 8, and 9 were determined on the basis of spectroscopic and chemical methods. Among the known triterpene glycosides, mogroside I E(1) (12) was a new naturally occurring compound. Eighteen **triterpenoids** (2-19) and 11-oxomogrol (20), a hydrolysis product of 9, were evaluated with respect to their inhibitory effects on the induction of **Epstein-Barr** virus early antigen (EBV-EA) by 12-O-tetradecanoylphorbol-13-acetate (TPA) in Raji cells, which is known to be a primary screening test for antitumor promoters. All of the compounds tested showed potent inhibitory effects on EBV-EA induction (70-100% inhibition at 1 x 10(3) mol ratio/TPA).

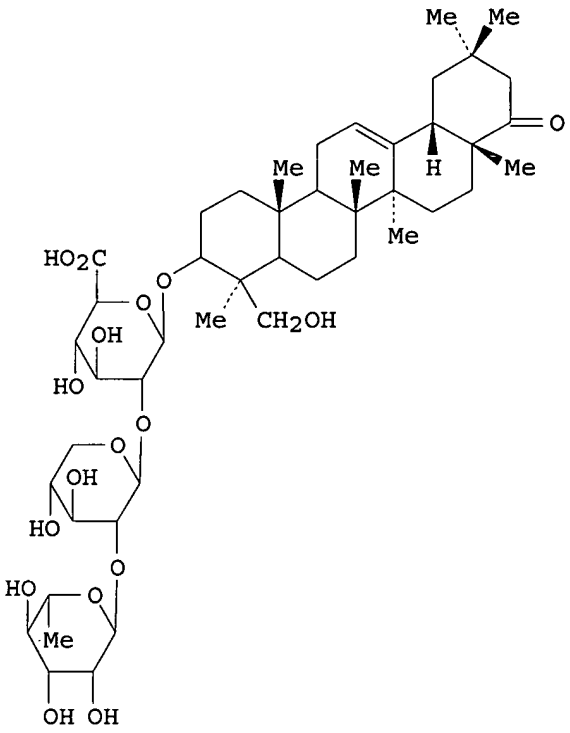
L2 ANSWER 79 OF 100 MEDLINE on STN
ACCESSION NUMBER: 2002040216 MEDLINE
DOCUMENT NUMBER: PubMed ID: 11767120
TITLE: Anti-tumor-promoting activity of the diterpene from Excoecaria agallocha. II.
AUTHOR: Konoshima T; Konishi T; Takasaki M; Yamazoe K; Tokuda H
CORPORATE SOURCE: Kyoto Pharmaceutical University, Japan.. konosima@mb.kyoto-phu.ac.jp
SOURCE: Biological & pharmaceutical bulletin, (2001 Dec) Vol. 24, No. 12, pp. 1440-2.
Journal code: 9311984. ISSN: 0918-6158.
PUB. COUNTRY: Japan
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200205
ENTRY DATE: Entered STN: 20020124
Last Updated on STN: 20020515
Entered Medline: 20020514

AB Eight new **diterpenoids** (1-8) have been isolated from the wood of Excoecaria agallocha (Euphorbiaceae) and their inhibitory effects on the induction of **Epstein-Barr** virus early antigen (EBV-EA) in Raji cells were examined to search for potent anti-tumor-promoters from natural resources. Of these compounds, the secolabdane-type **diterpenoid**, compound 7 exhibited a remarkable inhibitory effect on EBV-EA induction, and a significant anti-tumor-promoting effect in the mouse two-stage carcinogenesis test using 7,12-dimethylbenz[a]anthracene and 12-O-tetradecanovl-phorbol-13-acetate.

L2 ANSWER 55 OF 100 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1990:195188 CAPLUS
DOCUMENT NUMBER: 112:195188
TITLE: Studies on the constituents of leguminous plants. XII. The structures of new triterpenoid saponins from Wistaria brachybotrys Sieb. et Zucc
AUTHOR(S): Konoshima, Takao; Kozuka, Mutsuo; Haruna, Mitsumasa; Ito, Kazuo; Kimura, Takeatsu; Tokuda, Harukuni
CORPORATE SOURCE: Kyoto Pharm. Univ., Kyoto, 607, Japan
SOURCE: Chemical & Pharmaceutical Bulletin (1989), 37(10), 2731-5
CODEN: CPBTAL; ISSN: 0009-2363
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Four new **triterpenoid** saponins (wistariasponins A, B1, B2 and C) were isolated as Me esters from the knots of W. brachybotrys (Leguminosae), and their structures were characterized as 3-O-[α-L-rhamnopyranosyl-(1→2)-β-D-xylopyranosyl(1→2)-β-D-glucuronopyranosyl]wistariasapogenol A, 3-O-[α-L-rhamnopyranosyl(1→2)-β-D-xylopyranosyl(1→2)-β-D-glucuronopyranosyl]wistariasapogenol B, 3-O-[α-L-rhamnopyranosyl(1→2)-β-D-galactopyranosyl(1→2)-β-D-glucuronopyranosyl]wistariasapogenol B and 3-O-[α-L-rhamnopyranosyl(1→2)-β-D-xylopyranosyl-(1→2)-β-D-glucuronopyranosyl]soyasapogenol B, resp., on the basis of chemical and physicochem. evidence. The inhibitory effects of these saponins and sapogenols on **Epstein-Barr** virus activation induced by a tumor promoter were also tested.

L2 ANSWER 53 OF 100 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1991:628320 CAPLUS
DOCUMENT NUMBER: 115:228320
TITLE: Constituents of leguminous plants, XIII. New triterpenoid saponins from Wistaria brachybotrys
AUTHOR(S): Konoshima, Takao; Kozuka, Mutsuo; Haruna, Mitsumasa; Ito, Kazuo
CORPORATE SOURCE: Kyoto Pharm. Univ., Kyoto, 607, Japan
SOURCE: Journal of Natural Products (1991), 54(3), 830-6
CODEN: JNPRDF; ISSN: 0163-3864
DOCUMENT TYPE: Journal
LANGUAGE: English
GI



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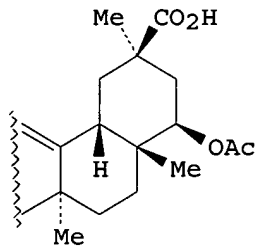


II

AB Two new **triterpenoid** saponins, wistariasaponins D (I) and G (II), and the known saponin dehydrosoyasaponin I were isolated from the knots of Wistaria brachybotrys. The structures of I and II were determined from their chemical and physicochem. evidence. The inhibitory effects of these saponins on the activation of **Epstein-Barr** virus early antigen that was induced by a tumor promoter were also tested for the primary screening of antitumor-promoting activities.

L2 ANSWER 46 OF 100 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1995:441845 CAPLUS
DOCUMENT NUMBER: 122:281523
TITLE: Inhibitory effects of cucurbitane **triterpenoids** on **Epstein-Barr** virus activation and two-stage carcinogenesis of skin tumor. II
AUTHOR(S): Konoshima, Takao; Takasaki, Midori; Kozuka, Mutsuo; Nagao, Tsuneatsu; Okabe, Hikaru; Irino, Nobuto; Nakasumi, Tetsuo; Tokuda, Harukuni; Nishino, Hoyoku
CORPORATE SOURCE: Kyoto Pharm. Univ., Kyoto, 607, Japan
SOURCE: Biological & Pharmaceutical Bulletin (1995), 18(2), 284-7
CODEN: BPBLEO; ISSN: 0918-6158
PUBLISHER: Pharmaceutical Society of Japan
DOCUMENT TYPE: Journal
LANGUAGE: English
AB To search for possible anti-tumor-promoters, we carried out a primary screening of twenty-four 29-nor-cucurbitacin glucosides isolated from the roots of Cayaponia tayuya (Cucurbitaceae) using an in vitro synergistic assay system. Of these glucosides, cayaponosides B (5), B3 (7), D (8), D3b (22) and C2 (23) exhibited significant inhibitory effects on Epstein-Barr virus (EBV) activation induced by the tumor promoter, 12-O-tetradecanoylphorbol-13-acetate (TPA). Furthermore, 5 and 23 exhibited remarkable anti-tumor-promoting effects on mouse skin tumor promotion in an in vivo two-stage carcinogenesis test.

L2 ANSWER 42 OF 100 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1996:80532 CAPLUS
DOCUMENT NUMBER: 124:219390
TITLE: Inhibitory effects of lantadenes and related **triterpenoids** on **Epstein-Barr** virus activation
AUTHOR(S): Inada, Akira; Nakanishi, Tsutomu; Tokuda, Harukuni; Nishino, Hoyoku; Iwashima, Akio; Sharma, Om P.
CORPORATE SOURCE: Fac. Pharmacetuical Sci., Setsunan Univ., Osaka, 573-01, Japan
SOURCE: Planta Medica (1995), 61(6), 558-9
CODEN: PLMEAA; ISSN: 0032-0943
PUBLISHER: Thieme
DOCUMENT TYPE: Journal
LANGUAGE: English
AB To search for possible inhibitors of tumor promotion, the inhibitory effects of lantadenes and related **triterpenoids** from Lantana camara L. (Verbenaceae) on **Epstein-Barr** virus activation in Raja cells were tested. The substitutions on the carboxylic acid through an ester bond might play an important role in the activity.

L2 ANSWER 40 OF 100 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1997:228375 CAPLUS
DOCUMENT NUMBER: 126:262894
TITLE: Influence of Quillaja saponaria **triterpenoid** content on the immunomodulatory capacity of **Epstein-Barr** virus iscoms
AUTHOR(S): Dotsika, E.; Karagouni, E.; Sundquist, B.; Morein, B.; Morgan, A.; Villacres-Eriksson, M.
CORPORATE SOURCE: Hellenic Pasteur Institute, Athens, 115 21, Greece
SOURCE: Scandinavian Journal of Immunology (1997), 45(3), 261-268
CODEN: SJIMAX; ISSN: 0300-9475
PUBLISHER: Blackwell
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The immune responses to immunostimulating complexes (iscoms) containing recombinant **Epstein-Barr** virus (EBV) gp340 envelope protein was evaluated in BALB/c (H-2d) and CBA (H-2k) mice. Gp340-iscoms were used either with a low content of Quillaja **triterpenoid** adjuvant (L-iscoms) or supplemented with addnl. Quillaja adjuvant in the form of iscomatrix (S-iscoms). Class and subclass distribution of anti-gp340 antibodies, EBV-neutralizing antibodies, antigen-specific T cell proliferation and cytokine production were determined and these results compared to those obtained by immunization with non-adjuvated gp340. The H-2d and H-2k mice were characterized as low or high responders in respect to the level of specific anti-gp340 antibodies, secretion of IgG2a isotype, antigen-specific lymphoproliferative capacity, interferon-γ (IFN-γ) and interleukin-10 (IL-10) production in the basic immunizations with gp340. While presentation of the antigen in iscom formulations with low levels of Quillaja **triterpenoids** induces a moderate enhancement of the immune responses in the low responder H-2d mice, supplementation with high levels of iscomatrix immunomodulator was required to enhance the immune responses in the high responder H-2k mice. In both mouse strains s.c. immunization with S-iscoms resulted in a significant increase of IgG1- and IgG2a-specific antibodies, as well as in strong antigen-specific proliferative response confirmed by the simultaneous cytokine production The enhanced antigen-specific secretion of IL-2 and IFN-γ together with the abrogation of IL-10 and the absence of IL-4 indicates that the responses were driven towards a Th1-type rather than Th2-type immune response. The S-iscom formulations minimized the differences in immune responses between the two mouse strains, but the capacity of immune sera to neutralize EBV transformation in vitro remained completely strain-dependent. These data indicate that immune responses generated by iscoms can be manipulated by altering the **triterpenoid** composition of the iscoms and that the levels of **triterpenoids** can determine whether or not a Th1-type response is made.

L2 ANSWER 41 OF 100 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1996:445087 CAPLUS
DOCUMENT NUMBER: 125:157883
TITLE: Anti-tumor-promoting activities of triterpenoids from ferns. I
AUTHOR(S): Konoshima, Takao; Takasaki, Midori; Masuda, Kazuo; Arai, Yoko; Shiojima, Kenji; Ageta, Hiroyuki; Tokuda, Harukuni
CORPORATE SOURCE: Kyoto Pharmaceutical Univ., Kyoto, 604, Japan
SOURCE: Biological & Pharmaceutical Bulletin (1996), 19(7), 962-965
CODEN: BPBLEO; ISSN: 0918-6158
PUBLISHER: Pharmaceutical Society of Japan
DOCUMENT TYPE: Journal
LANGUAGE: English
AB To search for possible anti-tumor-promoters (cancer chemopreventive

agents), the authors carried out primary screening of 23 **triterpenoid** hydrocarbons isolated from ferns using an in vitro synergistic assay system. Of these **triterpenoids**, hop17(21)-ene, neohop-13(18)-ene, neohop-12-ene, taraxerane, multiflor-9(11)-ene, multiflor-8-ene, glutin-5(10)-ene and taraxastane exhibited remarkable inhibitory effects on **Epstein-Barr** virus (EBV) activation induced by the tumor promoter, 12-O-tetradecanoylphorbol-13-acetate (TPA). Further, compds. hop17(21)-ene and neohop-13(18)-ene exhibited remarkable anti-tumor-promoting effects on mouse skin tumor promotion in an in vivo-two-stage carcinogenesis test using 7,12-dimethylbenz[a]anthracene (DMBA) as an initiator and TPA as a promoter.

L2 ANSWER 42 OF 100 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1996:80532 CAPLUS
DOCUMENT NUMBER: 124:219390
TITLE: Inhibitory effects of lantadenes and related **triterpenoids** on **Epstein-Barr** virus activation
AUTHOR(S): Inada, Akira; Nakanishi, Tsutomu; Tokuda, Harukuni; Nishino, Hoyoku; Iwashima, Akio; Sharma, Om P.
CORPORATE SOURCE: Fac. Pharmacetuical Sci., Setsunan Univ., Osaka, 573-01, Japan
SOURCE: Planta Medica (1995), 61(6), 558-9
CODEN: PLMEAA; ISSN: 0032-0943
PUBLISHER: Thieme
DOCUMENT TYPE: Journal
LANGUAGE: English
AB To search for possible inhibitors of tumor promotion, the inhibitory effects of lantadenes and related **triterpenoids** from Lantana camara L. (Verbenaceae) on **Epstein-Barr** virus activation in Raja cells were tested. The substitutions on the carboxylic acid through an ester bond might play an important role in the activity.

L2 ANSWER 43 OF 100 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1995:919138 CAPLUS
TITLE: New cucurbitan triterpenoids from cowania mexicana
AUTHOR(S): Takasaki, M.; Konoshima, T.
CORPORATE SOURCE: Kyoto Pharmaceutical University, Kyoto, 607, Japan
SOURCE: Book of Abstracts, 210th ACS National Meeting, Chicago, IL, August 20-24 (1995), Issue Pt. 1, AGFD-144. American Chemical Society: Washington, D. C.
CODEN: 61XGAC
DOCUMENT TYPE: Conference; Meeting Abstract
LANGUAGE: English
AB In a primary random screening of many plants and crude drugs for possible anti-tumor-promoters, the MeOH extract of Cowania mexicana showed strong inhibitory effect on **Epstein-Barr** virus activation induced by TPA. Bioassay-directed fractionation of the active extract led to the isolation of two new cucurbitan **triterpenoids** (1 and 2) together with known compds. (3 and 4). In this paper, we will present their isolation, structural elucidation and biol. activities.

L2 ANSWER 44 OF 100 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1995:918999 CAPLUS
TITLE: Anti-tumor-promoting activities of triterpenoid glycosides - cancer chemoprevention by saponins.
AUTHOR(S): Konoshima, T.
CORPORATE SOURCE: Kyoto Pharmaceutical University, Kyoto, 607, Japan
SOURCE: Book of Abstracts, 210th ACS National Meeting, Chicago, IL, August 20-24 (1995), Issue Pt. 1, AGFD-003. American Chemical Society: Washington, D. C.

CODEN: 61XGAC
DOCUMENT TYPE: Conference; Meeting Abstract
LANGUAGE: English
AB Recentry, many natural products having anti-tumor-promoting activities have been isolated from many medicinal plants. As a continuation of our biol. studies on the potential anti-tumor-promoting activities (cancer chemopreventive agents) of natural products, we have carried out a primary screening test of many Japanese and Chinese folk medicines using their inhibitory effects on **Epstein-Barr** virus early antigen (EBV-EA) activation induced by TPA. Of these compds., several **triterpenoids** exhibied strong inhibitory effects on EBV-EA activation and on two-stage carcinogenesis of mouse skin tumor. In this paper, the cancer chemopreventive activities of these **triterpenoid** glycosides (soyasaponin I from Wistaria brachybotrys, gleditsia saponin C from Gleditsia japonica, ginsenoside Rgl from Panax notoginseng etc.) will be presented and discussed.

L2 ANSWER 45 OF 100 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1995:441846 CAPLUS
DOCUMENT NUMBER: 122:305851
TITLE: Inhibitors of skin-tumor promotion. XIII. Inhibitory effects of euglobals and their related compounds on Epstein-Barr virus activation and on two-stage carcinogenesis of mouse skin tumors. (2)
AUTHOR(S): Takasaki, Midori; Konoshima, Takao; Kozuka, Mutsuo; Yoneyama, Koichi; Yoshida, Shigeo; Tokuda, Harukuni; Nishino, Hoyoku; Iwashima, Akio
CORPORATE SOURCE: Kyoto Pharm. Univ., Kyoto, 607, Japan
SOURCE: Biological & Pharmaceutical Bulletin (1995), 18(2), 288-94
CODEN: BPBLEO; ISSN: 0918-6158
PUBLISHER: Pharmaceutical Society of Japan
DOCUMENT TYPE: Journal
LANGUAGE: English
AB One hundred and fifteen synthesized mono, di, and trihydroxybenzamide and thiobenzamide derivs. having structures related to euglobals were examined for their inhibitory effects on Epstein-Barr virus (EBV) activation by 12-O-tetradecanoylphorbol-13-acetate (TPA) as a primary screening test for anti-tumor-promoters. In general, 3-acyl-2,4,6-trihydroxybenzamide and 3-acyl-2,4,6-trihydroxythiobenzamide derivs. exhibited strong or moderate activities, and the latter compds. were less cytotoxic than the former. Meanwhile, little or no activity was observed with mono and dihydroxybenzamide and dihydroxythiobenzamide derivs. Structural requirements for the activities of these compds. have been discussed in detail. Among the above compds., compds. 36 and 73, which were significantly active on the inhibition of EBV activation, were investigated using a two-stage mouse skin carcinogenesis test induced by 7,12-dimethylbenz[a]anthracene (DMBA) and TPA. The results of the in vivo test showed that both compds. have a stronger inhibitory effect than that of the well-known anti-tumor-promoter, glycyrrhetic acid. These results suggested that the two compds. might be valuable as anti-tumor-promoters in chemical carcinogenesis.

L2 ANSWER 46 OF 100 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1995:441845 CAPLUS
DOCUMENT NUMBER: 122:281523
TITLE: Inhibitory effects of cucurbitane **triterpenoids** on **Epstein-Barr** virus activation and two-stage carcinogenesis of skin tumor. II
AUTHOR(S): Konoshima, Takao; Takasaki, Midori; Kozuka, Mutsuo; Nagao, Tsuneatsu; Okabe, Hikaru; Irino, Nobuto; Nakasumi, Tetsuo; Tokuda, Harukuni; Nishino, Hoyoku
CORPORATE SOURCE: Kyoto Pharm. Univ., Kyoto, 607, Japan

SOURCE: Biological & Pharmaceutical Bulletin (1995), 18(2), 284-7
CODEN: BPBLEO; ISSN: 0918-6158
PUBLISHER: Pharmaceutical Society of Japan
DOCUMENT TYPE: Journal
LANGUAGE: English

AB To search for possible anti-tumor-promoters, we carried out a primary screening of twenty-four 29-nor-cucurbitacin glucosides isolated from the roots of Cayaponia tayuya (Cucurbitaceae) using an in vitro synergistic assay system. Of these glucosides, cayaponosides B (5), B3 (7), D (8), D3b (22) and C2 (23) exhibited significant inhibitory effects on Epstein-Barr virus (EBV) activation induced by the tumor promoter, 12-O-tetradecanoylphorbol-13-acetate (TPA). Furthermore, 5 and 23 exhibited remarkable anti-tumor-promoting effects on mouse skin tumor promotion in an in vivo two-stage carcinogenesis test.

L2 ANSWER 47 OF 100 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1994:600901 CAPLUS
DOCUMENT NUMBER: 121:200901
TITLE: Inhibition of Epstein-Barr virus (EBV) activation by triterpenes in Sesamum indicum L. callus
AUTHOR(S): Okada, Naomasa; Takebayashi, Keiichi; Kawashima, Jun; Niwano, Mitsuru; Mimura, Akio; Takahara, Yoshimasa; Tokuda, Harukuni
CORPORATE SOURCE: Biotechnol. Res. Lab., Kobe Steel, Ltd., Tsukuba, 305, Japan
SOURCE: Shokubutsu Soshiki Baiyo (1994), 11(2), 145-9
CODEN: SSBAET; ISSN: 0289-5773
DOCUMENT TYPE: Journal
LANGUAGE: English

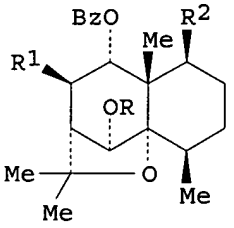
AB Two triterpenes, esculentic acid and 3β-(trans-p-coumaroyloxy)-2α,23-dihydroxyurs-12-en-28-oic acid, were isolated from Sesamum indicum L. callus cells and characterized and their anti-tumor promoter activities were examined These compds. inhibited Epstein-Barr virus (EBV) activation in Raji cells induced by 12-O-tetradecanoylhorbol-13-acetate (TPA) in short-term in vitro assay. The inhibitory effects were nealy equal to those of all-trans-retinoic acid. Viabilities of exponentially growing Raji cells were .apprx.85%. Neither showed any cytotoxicity at 4 μg/mL.

L2 ANSWER 48 OF 100 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1994:473248 CAPLUS
DOCUMENT NUMBER: 121:73248
TITLE: Inhibitory effects of cucurbitane **triterpenoids** on **Epstein-Barr** virus activation and two-stage carcinogenesis of skin tumors
AUTHOR(S): Konoshima, Takao; Takasaki, Midori; Tatsumoto, Takeshi; Kozuka, Mutsuo; Kasai, Ryoji; Tanaka, Osamu; Nie, Rui Lin; Tokuda, Harukuni; Nishino, Hoyoku; Iwashima, Akio
CORPORATE SOURCE: Kyoto Pharmaceutical University, Kyoto, 607, Japan
SOURCE: Biological & Pharmaceutical Bulletin (1994), 17(5), 668-71
CODEN: BPBLEO; ISSN: 0918-6158
DOCUMENT TYPE: Journal
LANGUAGE: English

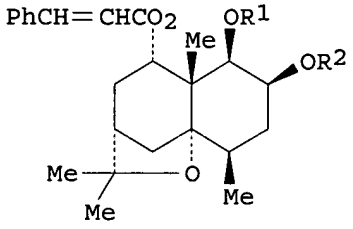
AB To search for possible anti-tumor-promoters, the authors carried out a primary screening of 21 cucurbitane **triterpenoids** using an in vitro assay system. Of these **triterpenoids**, scandenoside R6 (6), 23,24-dihydrocucurbitacin F (14), 25-acetyl-23,24-dihydrocucurbitacin F (15), 2-O-β-D-glucopyranosyl-23,24-dihydrocucurbitacin F (17) and cucurbitacin F (18) exhibited significant inhibitory effects on **Epstein-Barr** virus (EBV) activation induced by the tumor

promoter, 12-O-tetradecanoyl-phorbol-13-acetate (TPA). Further, compds. 14 and 17 exhibited remarkable anti-tumor-promotion effects on mouse skin tumor promotion in an in vivo two-stage carcinogenesis test.

L2 ANSWER 49 OF 100 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1993:556281 CAPLUS
DOCUMENT NUMBER: 119:156281
TITLE: Structures of sesquiterpene polyol esters from Celastrus stephanotiifolius with potential tumor-promotion inhibitory activity
AUTHOR(S): Takaishi, Yoshihisa; Ohshima, Syunji; Nakano, Kimiko; Tomimatsu, Toshiaki; Tokuda, Harukuni; Nishino, Hoyoku; Iwashima, Akio
CORPORATE SOURCE: Fac. Pharm. Sci., Univ. Tokushima, Tokushima, 770, Japan
SOURCE: Journal of Natural Products (1993), 56(6), 815-24
CODEN: JNPRDF; ISSN: 0163-3864
DOCUMENT TYPE: Journal
LANGUAGE: English
GI



I, R=COCH:CHPh, R^1=H, R^2=OAc
V, R=Ac, R^1=R^2=OAc
VI, R=Ac, R^1=R^2=OBz
VII, R=Ac, R^1=OH, R^2=OBz
VIII, R=Ac, R^1=OCOCHMeEt, R^2=OBz



II, R^1=Ac, R^2=H
III, R^1=H, R^2=Ac
IV, R^1=Ac, R^2=Bz

AB Esters of eight new (I-VIII) and five known **sesquiterpenoid** polyalcs. have been isolated from Celastrus stephanotiifolius. Their structures were established on the basis of chemical reactions and spectral anal. The structural elucidation indicated that the structures of some related compds. should be revised. The isolated sesquiterpenes were observed to inhibit **Epstein-Barr** virus early antigen activation significantly at low doses.

L2 ANSWER 50 OF 100 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1993:468096 CAPLUS
DOCUMENT NUMBER: 119:68096
TITLE: Phytochemical studies on meliaceous plants. VIII. Structures and inhibitory effects on **Epstein -Barr** virus activation of **triterpenoids** from leaves of Chisocheton macrophyllus King
AUTHOR(S): Inada, Akira; Somekawa, Midori; Murata, Hiroko; Nakanishi, Tsutomu; Tokuda, Harukuni; Nishino, Hoyoku; Iwashima, Akio; Darnaedi, Dedy; Jurata, Jin

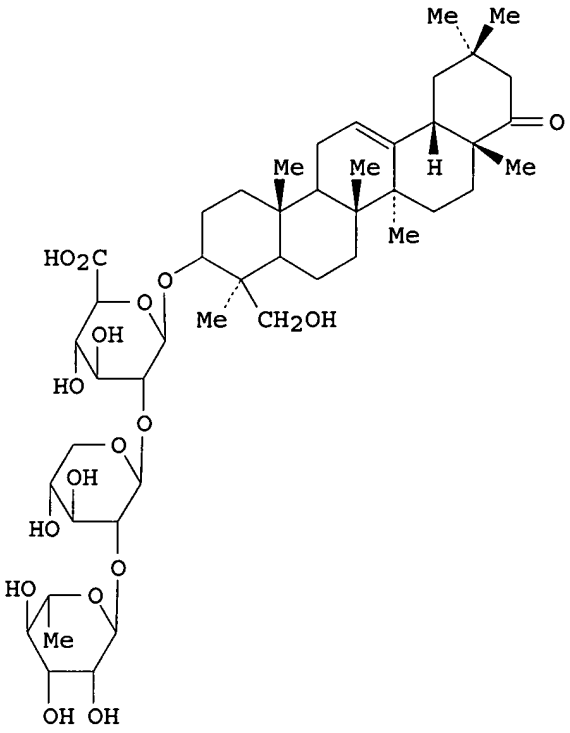
CORPORATE SOURCE: Fac. Pharm. Sci., Setsunan Univ., Hirakata, 573-01, Japan
SOURCE: Chemical & Pharmaceutical Bulletin (1993), 41(3), 617-19
CODEN: CPBTAL; ISSN: 0009-2363
DOCUMENT TYPE: Journal
LANGUAGE: English
AB A 24-epimeric mixture of a new **triterpenoid**, 24-hydroxydammara-20,25-dien-3-one , and two known **triterpenoids**, moronic acid and betulonic acid , were isolated from leaves of Chisocheton macrophyllus, and the inhibitory effects of these **triterpenoids** on **Epstein-Barr** virus early antigen (EBV-EA) activation induced by 12-O-tetradecanoylphorbol-13-acetate were tested.

L2 ANSWER 51 OF 100 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1993:139240 CAPLUS
DOCUMENT NUMBER: 118:139240
TITLE: Inhibitory effects of dihydroagarofuran sesquiterpenes on Epstein-Barr virus activation. [Erratum to document cited in CA118(7):51849w]
AUTHOR(S): Takaishi, Yoshihisa; Ujita, Kunie; Tokuda, Harukuni; Nishino, Hoyoku; Iwashima, Akio; Fujita, Tetsuro
CORPORATE SOURCE: Fac. Pharm. Sci., Univ. Tokushima, Tokushima, 770, Japan
SOURCE: Cancer Letters (Shannon, Ireland) (1992), 67(2-3), 215
CODEN: CALEDQ; ISSN: 0304-3835
DOCUMENT TYPE: Journal
LANGUAGE: English
AB An error in the Summary and an error in the text have been corrected The errors were not reflected in the abstract or the index entries.

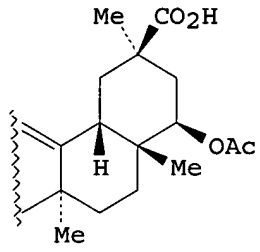
L2 ANSWER 52 OF 100 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1993:51849 CAPLUS
DOCUMENT NUMBER: 118:51849
TITLE: Inhibitory effects of dihydroagarofuran sesquiterpenes on Epstein-Barr virus activation
AUTHOR(S): Takaishi, Yoshihisa; Ujita, Kunie; Tokuda, Harukuni; Nishino, Hoyoku; Iwashima, Akio; Fujita, Tetsuro
CORPORATE SOURCE: Fac. Pharm. Sci., Univ. Tokushima, Tokushima, 770, Japan
SOURCE: Cancer Letters (Shannon, Ireland) (1992), 65(1), 19-26
CODEN: CALEDQ; ISSN: 0304-3835
DOCUMENT TYPE: Journal
LANGUAGE: English
AB To search for possible antitumor promoters, the authors carried out a primary screening of thirty-seven dihydroagarofuran sesquiterpenes from Tripterygium wilfordii Hook fil. var. regelii Makino and Euonymus sieboldianus Blume, using their possible inhibitory effects on the Epstein-Barr virus early antigen (EBV-EA) activation which is induced by 12-O-tetradecanoylphorbol-13-acetate (TPA) in Raji cells. Some of these sesquiterpenes, triptofordin, 1,2,6,8,15-pentaacetoxy-9-benzoyloxy-4-hydroxy-β-dihydroagarofuran, and triptogelin A-1 have been observed to significantly inhibit the EBV-EA activation at low doses. Based on the results, the structural requirements for the activity of these compds. are discussed.

L2 ANSWER 53 OF 100 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1991:628320 CAPLUS
DOCUMENT NUMBER: 115:228320
TITLE: Constituents of leguminous plants, XIII. New triterpenoid saponins from Wistaria brachybotrys
AUTHOR(S): Konoshima, Takao; Kozuka, Mutsuo; Haruna, Mitsumasa; Ito, Kazuo
CORPORATE SOURCE: Kyoto Pharm. Univ., Kyoto, 607, Japan

SOURCE: Journal of Natural Products (1991), 54(3), 830-6
CODEN: JNPRDF; ISSN: 0163-3864
DOCUMENT TYPE: Journal
LANGUAGE: English
GI



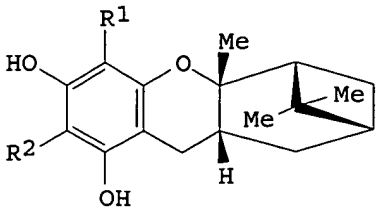
I



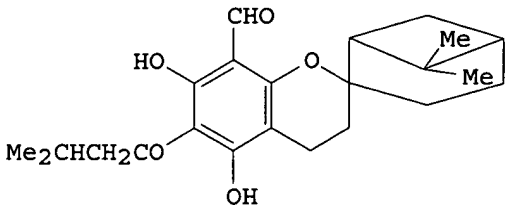
II

AB Two new **triterpenoid** saponins, wistariasaponins D (I) and G (II), and the known saponin dehydrosoyasaponin I were isolated from the knots of Wistaria brachybotrys. The structures of I and II were determined from their chemical and physicochem. evidence. The inhibitory effects of these saponins on the activation of **Epstein-Barr** virus early antigen that was induced by a tumor promoter were also tested for the primary screening of antitumor-promoting activities.

L2 ANSWER 54 OF 100 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1990:608333 CAPLUS
DOCUMENT NUMBER: 113:208333
TITLE: Structures of euglobal-G1, -G2, and -G3 from Eucalyptus grandis, three new inhibitors of Epstein-Barr virus activation
AUTHOR(S): Takasaki, Midori; Konoshima, Takao; Shingu, Tetsuro; Tokuda, Harukuni; Nishino, Hoyoku; Iwashima, Akio; Kozuka, Mutsuo
CORPORATE SOURCE: Kyoto Pharm. Univ., Kyoto, 607, Japan
SOURCE: Chemical & Pharmaceutical Bulletin (1990), 38(5), 1444-6
CODEN: CPBTAL; ISSN: 0009-2363
DOCUMENT TYPE: Journal
LANGUAGE: English
GI



I, R^1=$COCH_2CHMe_2$, R^2=CHO
II, R^1=CHO, R^2=$COCH_2CHMe_2$



III

AB Three new euglobals with acylphloroglucinol-monoterpene structures, named euglobal G1 (I), G2 (II), and G3 (III) were isolated from the chloroform extract of the juvenile leaves of E. grandis (Myrtaceae). The structures of these new compds. were determined from spectral data. The compds. strongly inhibited the Epstein-Barr virus activation.

L2 ANSWER 55 OF 100 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1990:195188 CAPLUS
DOCUMENT NUMBER: 112:195188
TITLE: Studies on the constituents of leguminous plants. XII. The structures of new triterpenoid saponins from Wistaria brachybotrys Sieb. et Zucc
AUTHOR(S): Konoshima, Takao; Kozuka, Mutsuo; Haruna, Mitsumasa; Ito, Kazuo; Kimura, Takeatsu; Tokuda, Harukuni
CORPORATE SOURCE: Kyoto Pharm. Univ., Kyoto, 607, Japan
SOURCE: Chemical & Pharmaceutical Bulletin (1989), 37(10), 2731-5
CODEN: CPBTAL; ISSN: 0009-2363
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Four new **triterpenoid** saponins (wistariasponins A, B1, B2 and C) were isolated as Me esters from the knots of W. brachybotrys (Leguminosae), and their structures were characterized as 3-O-[α-L-rhamnopyranosyl-(1→2)-β-D-xylopyranosyl(1→2)-β-D-glucuronopyranosyl]wistariasapogenol A, 3-O-[α-L-rhamnopyranosyl(1→2)-β-D-xylopyranosyl(1→2)-β-D-glucuronopyranosyl]wistariasapogenol B, 3-O-[α-L-rhamnopyranosyl(1→2)-β-D-galactopyranosyl(1→2)-β-D-glucuronopyranosyl]wistariasapogenol B and 3-O-[α-L-rhamnopyranosyl(1→2)-β-D-xylopyranosyl-(1→2)-β-D-glucuronopyranosyl]soyasapogenol B, resp., on the basis of chemical and physicochem. evidence. The inhibitory effects of these saponins and sapogenols on **Epstein-Barr** virus activation induced by a tumor promoter were also tested.

L2 ANSWER 56 OF 100 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1990:193553 CAPLUS
DOCUMENT NUMBER: 112:193553
TITLE: Non-promoting diterpene esters can induce Epstein-Barr virus early antigen expression in the Raji cell line
AUTHOR(S): Evans, A. T.; Brooks, G.; Evans, F. J.
CORPORATE SOURCE: Dep. Pharmacognosy, Sch. Pharm., London, WC1N 1AX, UK
SOURCE: Cancer Letters (Shannon, Ireland) (1990), 49(1), 25-9

CODEN: CALEDQ; ISSN: 0304-3835
DOCUMENT TYPE: Journal
LANGUAGE: English
AB A range of diterpene ester ligands with selective biol. activity (e.g., irritant but not tumor promoting) were tested for their ability to induce Epstein-Barr virus (EBV) early antigen expression in the lymphoblastoid Raji cell line. All C12/C13 substituted compds. were capable of inducing some antigen expression at nanomolar - micromolar levels, including desacetyl-α-sapinine, a compound largely devoid of biol. activity. The nonpromoting, fluorescent compound, sapintoxin A, was virtually equipotent with promoting compds. Evidently, although the assay has relevance to the specific condition of chronic diterpene ester exposure occurring in conjunction with high EBV infection rates, there was relatively poor correlation with mouse skin tumor promoting potential.

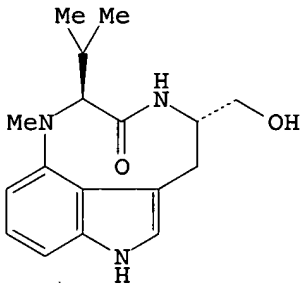
L2 ANSWER 57 OF 100 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1990:51876 CAPLUS
DOCUMENT NUMBER: 112:51876
TITLE: Studies on the biosynthesis of indole alkaloid tumor promoter teleocidin
AUTHOR(S): Irie, K.; Kajiyama, S.; Funaki, A.; Koshimizu, K.; Hayashi, H.; Arai, M.
CORPORATE SOURCE: Dep. Food Sci. Technol., Kyoto Univ., Kyoto, Japan
SOURCE: Tennen Yuki Kagobutsu Toronkai Koen Yoshishu (1989), 31st, 308-15
CODEN: TYKYDS
DOCUMENT TYPE: Journal
LANGUAGE: Japanese
AB Teleocidins produced by actinomycetes are potent tumor promoters and peculiar indole alkaloids containing a 9-membered lactam ring and a complex **monoterpenoid** moiety. Among the teleocidin-producing actinomycetes, Streptoverticillium blastmyceticum NA34-17, which was previously found to produce the **Epstein-Barr** virus early antigen inducing indole alkaloids, has a characteristic feature of producing (-)-indolactam V (I), the common biosynthetic intermediate of teleocidins, in quantity. This characteristic would be advantageous to obtaining a wide variety of biosynthetic intermediates of teleocidins. Using this microorganism, a possible biosynthetic pathway of teleocidins was proposed on the basis of feeding expts. with several D- or 13C-labeled precursors and isolation of new teleocidin-related metabolites named blastmycetins D (II) and E (III). Feeding expts. with several D- or 13C-labeled amino acids and possible biosynthetic precursor showed that I is biosynthesized from L-tryptophan, L-valine and L-methionine via N-methyl-L-valyl-L-tryptophanol. Based on the isolation of II and III, and feeding expts. with D-labeled L-methionine, the hypothesis is presented that (-)-N1-nerylindolactam V is a common biosynthetic intermediate of teleocidins and that the complex **monoterpenoid** moieties of teleocidins, for example those of olivoretin A, C and D, arose from differences in the the sequence of the methylation and the aza-Claisen rearrangement and the position of the methylation.

L2 ANSWER 58 OF 100 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1988:562908 CAPLUS
DOCUMENT NUMBER: 109:162908
TITLE: Inhibitory effects of 12-O-tetradecanoylphorbol-13-acetate- and teleocidin B-induced Epstein-Barr virus by saponins and its related compounds
AUTHOR(S): Tokuda, Harukuni; Konoshima, Takao; Kozuka, Mutsuo; Kimura, Takeatsu
CORPORATE SOURCE: Fac. Med., Kyoto Univ., Kyoto, 606, Japan
SOURCE: Cancer Letters (Shannon, Ireland) (1988), 40(3), 309-17
CODEN: CALEDQ; ISSN: 0304-3835
DOCUMENT TYPE: Journal

LANGUAGE: English

AB The inhibitory effects of monoterpene and triterpene glycosides on the activation of Epstein-Barr virus (EBV) by 12-O-tetradecanoylphorbol-13-acetate (TPA) and teleocidin B were studied in Raji cells. Concomitant treatment of Raji cells with TPA or Teleocidin B and the glycosides showed the inhibition of EBV activation. In vitro structure-activity studies were conducted on a variety of triterpene glycosides having a 1-sugar chain (monodesmoside), a 2-sugar chain (bisdesmoside), and an acyl side-chain. Among these glycosides, triterpene 3-O-glycosides and acylated saponins effectively inhibited EBV activation; therefore, the sugar chain at C-3 of the triterpene and(or) the acyl side-chain were determined to be essential for the inhibitory activities in this test system.

L2 ANSWER 59 OF 100 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1987:631130 CAPLUS
DOCUMENT NUMBER: 107:231130
TITLE: Structure-activity studies of the indole alkaloid tumor promoter teleocidins
AUTHOR(S): Irie, Kazuhiro; Hagiwara, Nobuyuki; Tokuda, Harukuni; Koshimizu, Koichi
CORPORATE SOURCE: Fac. Agric., Univ. Kyoto, Kyoto, 606, Japan
SOURCE: Carcinogenesis (1987), 8(4), 547-52
CODEN: CRNGDP; ISSN: 0143-3334
DOCUMENT TYPE: Journal
LANGUAGE: English
GI



I

AB Possible tumor-promoting activities of teleocidins and several microbial metabolites in vivo were evaluated by **Epstein-Barr** virus early antigen-inducing activity and inhibition of specific binding of [3H]TPA to a mouse epidermal particulate fraction. These 2 biol. activities correlated well for each derivative Large substituents at positions 2 and 5 remarkably lowered the activities, indicating that the structural requirements for the activities of these domains are especially strict. To investigate in detail the contribution of position 2 of (-)-indolactam V (I) to the activities, new microbial metabolites, (-)-2-oxyindolactam V and blastmycetin B and C, were also tested. These compds. were inactive, suggesting that the double bond at position 2 plays an important role for the activities. Substituents at position 7 generally enhanced the activities and even blastmycetin A, which is a dimer of (-)-indolactam V, showed high activities. The effects of the substituents on binding ability to the TPA receptor were analyzed quant. using physicochem. substituent parameters and regression anal. The results exhibited the fact that hydrophobicity of the substituents plays a critical role for receptor binding, and supported the hypothesis that the **monoterpenoid** moiety of teleocidins is involved in the nonspecific hydrophobic interaction with phospholipids in cell membrane.

L2 ANSWER 20 OF 100 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2002:751584 CAPLUS
DOCUMENT NUMBER: 138:151
TITLE: Inhibitory Effects of Cucurbitane Glycosides and Other **Triterpenoids** from the Fruit of Momordica grosvenori on **Epstein-Barr** Virus Early Antigen Induced by Tumor Promoter 12-O-Tetradecanoylphorbol-13-acetate
AUTHOR(S): Ukiya, Motohiko; Akihisa, Toshihiro; Tokuda, Harukuni; Toriumi, Masakazu; Mukainaka, Teruo; Banno, Norihiro; Kimura, Yumiko; Hasegawa, Jun-ichi; Nishino, Hoyoku
CORPORATE SOURCE: College of Science and Technology, Nihon University, Chiyoda-ku, Tokyo, 101-8308, Japan
SOURCE: Journal of Agricultural and Food Chemistry (2002), 50(23), 6710-6715
CODEN: JAFCAU; ISSN: 0021-8561
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Two new triterpene benzoates, 5-dehydrokarounidiol dibenzoate (1) and karounidiol dibenzoate (2), and two new triterpene glycosides, 5α,6α-epoxymogroside IE1 (8) and 11-oxomogroside A1 (9), along with 15 known **triterpenoids** (one triterpene benzoate, 3; three triterpene mono-ols, 4-6; one triterpene aglycon, 7; and 10 triterpene glycosides, 10-19), were isolated from the ethanol extract of the fruit of Momordica grosvenori. The structures of 1, 2, 8, and 9 were determined on the basis of spectroscopic and chemical methods. Among the known triterpene glycosides, mogroside I E1 (12) was a new naturally occurring compound Eighteen **triterpenoids** (2-19) and 11-oxomogrol (20), a hydrolysis product of 9, were evaluated with respect to their inhibitory effects on the induction of **Epstein-Barr** virus early antigen (EBV-EA) by 12-O-tetradecanoylphorbol-13-acetate (TPA) in Raji cells, which is known to be a primary screening test for antitumor promoters. All of the compds. tested showed potent inhibitory effects on EBV-EA induction (70-100% inhibition at 1+103 mol ratio/TPA).
REFERENCE COUNT: 18 THERE ARE 18 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L2 ANSWER 21 OF 100 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2002:727037 CAPLUS
DOCUMENT NUMBER: 137:242159
TITLE: Carcinogenesis promotion inhibitors containing serratane-type triterpenoids
INVENTOR(S): Tanaka, Reiko; Yoshitake, Akira
PATENT ASSIGNEE(S): Sumitomo Chemical Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 11 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2002275057	A2	20020925	JP 2001-80474	20010321
PRIORITY APPLN. INFO.:			JP 2001-80474	20010321

OTHER SOURCE(S): MARPAT 137:242159
AB The invention provides serratane-type **triterpenoids** especially isolated from Picea jezoensis or Picea jezoensis hondoensis as carcinogenesis promotion inhibitors. A compound 13α-,14α-Epoxy-3β-methoxyserratan-21β-ol was isolated from Picea jezoensis bark and its inhibitory effects on **Epstein-Barr** virus early antigen (EBV-EA) activation induced by 2-O-tetradecanoylphorbol-13-acetate

(TPA) was tested.

L2 ANSWER 22 OF 100 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2001:879813 CAPLUS
DOCUMENT NUMBER: 136:160989
TITLE: Anti-tumor-promoting activity of the diterpene from Excoecaria agallocha. II
AUTHOR(S): Konoshima, Takao; Konishi, Tenji; Takasaki, Midori; Yamazoe, Kiyonori; Tokuda, Harukuni
CORPORATE SOURCE: Kyoto Pharmaceutical University, Kyoto, 607-8414, Japan
SOURCE: Biological & Pharmaceutical Bulletin (2001), 24(12), 1440-1442
CODEN: BPBLEO; ISSN: 0918-6158
PUBLISHER: Pharmaceutical Society of Japan
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Eight new **diterpenoids** (1-8) have been isolated from the wood of Excoecaria agallocha (Euphorbiaceae) and their inhibitory effects on the induction of **Epstein-Barr** virus early antigen (EBV-EA) in Raji cells were examined to search for potent anti-tumor-promoters from natural resources. Of these compds., the secolabdane-type **diterpenoid**, compound 7 exhibited a remarkable inhibitory effect on EBV-EA induction, and a significant anti-tumor-promoting effect in the mouse two-stage carcinogenesis test using 7,12-dimethylbenz[a]anthracene and 12-O-tetradecanoyl-phorbol-13-acetate.
REFERENCE COUNT: 20 THERE ARE 20 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L2 ANSWER 23 OF 100 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2001:863496 CAPLUS
DOCUMENT NUMBER: 135:366719
TITLE: Composition for and method of treatment of Kaposi's sarcoma and Kaposi's sarcoma-associated herpesvirus infection using triterpenoids
INVENTOR(S): Flore, Ornella
PATENT ASSIGNEE(S): USA
SOURCE: U.S., 16 pp.
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 6323183	B1	20011127	US 1999-324473	19990602
US 2002091158	A1	20020711	US 2001-976838	20011015

PRIORITY APPLN. INFO.: US 1999-324473 A3 19990602
AB Methods and compns. for treating Kaposi's sarcoma and **Epstein Barr** virus using a a therapeutic derivative of a **triterpenoid** acid and derivs. thereof are disclosed. The present invention relates to the use of a **triterpenoid** preferably a glycyrrhizic acid (glycyrrhizin) to inhibit the transcription of viral latent genes and the consequential viral latent cycle at doses that do not affect the uninfected cells. Using glycyrrhizic acid and derivs., the Kaposi's sarcoma-associated herpesvirus (KSHV) infected cells are completely killed six days after treatment.
REFERENCE COUNT: 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L2 ANSWER 24 OF 100 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2001:709029 CAPLUS
DOCUMENT NUMBER: 136:95571

TITLE: Anti-tumor promoting effects of multiflorane-type triterpenoids and cytotoxic activity of karounidiol against human cancer cell lines
AUTHOR(S): Akihisa, T.; Tokuda, H.; Ichiishi, E.; Mukainaka, T.; Toriumi, M.; Ukiya, M.; Yasukawa, K.; Nishino, H.
CORPORATE SOURCE: Nihon University, College of Science and Technology, Tokyo, Chiyoda-ku, 101-8308, Japan
SOURCE: Cancer Letters (Shannon, Ireland) (2001), 173(1), 9-14
CODEN: CALEDQ; ISSN: 0304-3835
PUBLISHER: Elsevier Science Ireland Ltd.
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Forty-nine multiflorane-type **triterpenoids** consisting of 11 compds. isolated from the seeds of Trichosanthes kirilowii (Cucurbitaceae) and 38 of their derivs. have been evaluated for their inhibitory effects on **Epstein-Barr** virus early antigen (EBV-EA) activation induced by the tumor promoter 12-O-tetradecanoylphorbol-13-acetate in Raji cells as a primary screening test for antitumor promoters. All of the compds. tested showed an inhibitory effect against EBV-EA activation, and among which 43 were revealed to possess remarkable activity with potencies either comparable to or stronger than that of glycyrrhetic acid, a known natural antitumor promoter. Their structure-activity relation is discussed. Evaluation of the cytotoxic activity of karounidiol against human cancer cell lines exhibited cytotoxicity especially against a human renal cancer.

REFERENCE COUNT: 13 THERE ARE 13 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L2 ANSWER 25 OF 100 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2001:686777 CAPLUS
DOCUMENT NUMBER: 136:79360
TITLE: Cancer chemopreventive agents, serratane-type triterpenoids from Picea jezoensis
AUTHOR(S): Tanaka, R.; Minami, T.; Tsujimoto, K.; Matsunaga, S.; Tokuda, H.; Nishino, H.; Terada, Y.; Yoshitake, A.
CORPORATE SOURCE: Department of Medicinal Chemistry, Osaka University of Pharmaceutical Sciences, Takatsuki, Osaka, 569-1094, Japan
SOURCE: Cancer Letters (Shannon, Ireland) (2001), 172(2), 119-126
CODEN: CALEDQ; ISSN: 0304-3835
PUBLISHER: Elsevier Science Ireland Ltd.
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Seven serratane-type **triterpenoids** isolated from the cuticle of Picea jezoensis (Sieb. et Zucc.) Carr. jezoensis (Pinaceae) and the stem bark of Picea jezoensis (Sieb. et Zucc.) Carr. hondoensis (Mayer) Rehder (Pinaceae) were studied their possible inhibitory effects on **Epstein-Barr** virus early antigen (EBV-EA) activation induced by 12-O-tetradecanoylphorbol-13-acetate (TPA). All compds. showed strong inhibitory effects on the EBV-EA activation, being stronger than that of oleanolic acid, which exerts on cancer preventive activity in animal carcinogenesis models. Among these compds., 13α, 14α-epoxy-3β-methoxyserratan-21β-ol and 3β-methoxy-21α-hydroxyserrat-14-en-29-al were investigated for the inhibitory effects in a two-stage mouse skin carcinogenesis test on mouse skin using 7,12-dimethylbenz[a]anthracene as initiator and TPA as promoter. 13α,14α-Epoxy-3β-methoxyserratan-21β-ol was found to exhibit the excellent antitumor promoting activity in the in vivo carcinogenesis test.

REFERENCE COUNT: 24 THERE ARE 24 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L2 ANSWER 26 OF 100 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2001:467000 CAPLUS
DOCUMENT NUMBER: 135:313267
TITLE: Anti-tumor promoting diterpenes from the stem bark of Thuja standishii (Cupressaceae)
AUTHOR(S): Iwamoto, M.; Ohtsu, H.; Tokuda, H.; Nishino, H.; Matsunaga, S.; Tanaka, R.
CORPORATE SOURCE: Department of Medicinal Chemistry, Osaka University of Pharmaceutical Sciences, Takatsuki, Osaka, 569-1094, Japan
SOURCE: Bioorganic & Medicinal Chemistry (2001), 9(7), 1911-1921
CODEN: BMECEP; ISSN: 0968-0896
PUBLISHER: Elsevier Science Ltd.
DOCUMENT TYPE: Journal
LANGUAGE: English
OTHER SOURCE(S): CASREACT 135:313267

AB Three new labdane-type **diterpenoids**, labda-8(17),13-dien-15,12R-olid-19-oic acid (1), 12S-hydroxylabda-8(17),13(16),14-trien-19-oic acid (2) and 13-ethoxylabda-8(17),11,14-trien-19-oic acid (3), along with known **diterpenoids**, trans-communic acid (4), totarol (5), 12-methoxyabieta-8,11,13-trien-11-ol (6), and 7α,8α-epoxy-6α-hydroxyabieta-9(11),13-dien-12-one (7) were isolated from the stem bark of Thuja standishii. The structures of 1-3 were established by spectroscopic methods and chemical conversion. These compds. together with standishinal (8), 12-hydroxy-6,7-seco-abieta-8,11,13-trien-6,7-dial (9) and 6α-hydroxysugiol (10) were tested for their inhibitory effects on **Epstein-Barr** virus early antigen (EBV-EA) activation induced by 12-O-tetradecanoylphorbol-13-acetate (TPA), as a test for potential cancer chemopreventive agents. Compound 10 showed strong inhibitory effect on EBV-EA induction (100% inhibition at 1000 mol ratio/TPA), and compds. 2 and 6 showed moderate inhibitory effects on EBV-EA induction. In addition, 15-oxolabda-8(17),11Z,13E-trien-19-oic acid (11) was found to exhibit the anti-tumor promoting activity in two-stage mouse skin carcinogenesis test using 7,12-dimethylbenz[a]anthracene and TPA. 15-Oxolabda-8(17),11Z,13E-trien-19-oic acid exhibited the anti-tumor promoting activity in vivo two-stage mouse skin carcinogenesis test using 7,12-dimethylbenz[a]anthracene and TPA.

REFERENCE COUNT: 18 THERE ARE 18 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L2 ANSWER 27 OF 100 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2001:176331 CAPLUS
DOCUMENT NUMBER: 134:338255
TITLE: Abietane **diterpenoids** from the cones of Larix kaempferi and their inhibitory effects on **Epstein-Barr** virus activation
AUTHOR(S): Ohtsu, Hironori; Tanaka, Reiko; In, Yasuko; Matsunaga, Shunyo; Tokuda, Harukuni; Nishino, Hoyoku
CORPORATE SOURCE: Department of Medicinal Chemistry, Osaka University of Pharmaceutical Sciences, Osaka, Japan
SOURCE: Planta Medica (2001), 67(1), 55-60
CODEN: PLMEAA; ISSN: 0032-0943
PUBLISHER: Georg Thieme Verlag
DOCUMENT TYPE: Journal
LANGUAGE: English
GI

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

AB Four known diterpenes I (R = H), II (R = H), I (R = OH), and III, and four new abietane diterpenes, 15-hydroxy-8α,14α,12α,13α-

diepoxyabietan-18-oic acid (II, R = OH), 7α,8α,13β,14.bet a.-diepoxyabietan-18-oic acid (IV), 18-nor-abieta-8,11,13-triene-4α,7α,15-triol (V, R = OH), and abieta-8,11,13-triene-7α,15,18-triol (V, R = CH2OH) were isolated from the CHCl3 extract of the cones of Larix kaempferi. A known compound, 13,14-seco-13,14-dioxoabiet-13-en-18-oic acid (III) was isolated from natural sources for the first time. Their structures were determined by chemical and spectroscopic methods including 1D and 2D NMR techniques. The absolute stereostructure of IV was determined by x-ray crystallog. anal. The inhibitory effects of these compds. on Epstein-Barr virus early antigen (EBV-EA) activation induced by the tumor promoter, 12-O-tetradecanoyl-phorbol-13-acetate (TPA), were examined as a primary screening for antitumor promotors.

REFERENCE COUNT: 19 THERE ARE 19 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L2 ANSWER 28 OF 100 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2001:103906 CAPLUS
DOCUMENT NUMBER: 135:282426
TITLE: Anti-tumor-promoting activities (cancer chemopreventive activities) of natural products
AUTHOR(S): Konoshima, Takao; Takasaki, Midori
CORPORATE SOURCE: Kyoto Pharmaceutical University, Kyoto, 607-8414, Japan
SOURCE: Studies in Natural Products Chemistry (2000), 24(Bioactive Natural Products (Part E)), 215-267
CODEN: SNPCE2
PUBLISHER: Elsevier Science B.V.
DOCUMENT TYPE: Journal; General Review
LANGUAGE: English

AB A review with 66 refs. To search for possible anti-tumor-promoters (cancer chemopreventive agents) from natural resource, more than one-hundred and fifty natural products (flavonoids, lignans, euglobals, **triterpenoids**, saponins and cardiac steroids etc.) were examined by primary screening test using in vitro synergistic assay on **Epstein -Barr** virus early antigen (EBA-EA) activation. Several compds. which exhibited the inhibitory effect on EBV-EA activation were further assayed by in vivo two-stage carcinogenesis test (mouse skin, pulmonary and liver carcinogenesis). Of many aromatic compds., afromosin, pendulone, amorphispironone, tephrosin, asarinin, xanthoxylol, euglobal-Gl, and euglobal-III exhibited significant anti-tumor-promoting activities on mouse skin and pulmonary carcinogenesis. Further, many novel **triterpenoids** and their glycosides were isolated from Leguminous and Cucurbitaceous plants, and gleditsiasaponin C, gymicladussaponin G, 23, 24-dihydrocucurbitacin F, and cayaponoside B also exhibited strong inhibitory effects on two-stage carcinogenesis test. Of cardiac glycosides, digitoxin exhibited the most remarkable effects on mouse skin and pulmonary carcinogenesis. Furthermore, the combined effects of plural constituents and plant exts. on cancer chemoprevention were also examined, and the combination of afromosin with soyasaponin I enhanced the each anti-tumor-promoting activity. Consequently, many active compds. were found out and these compds. might be valuable chemopreventive agents.

REFERENCE COUNT: 66 THERE ARE 66 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

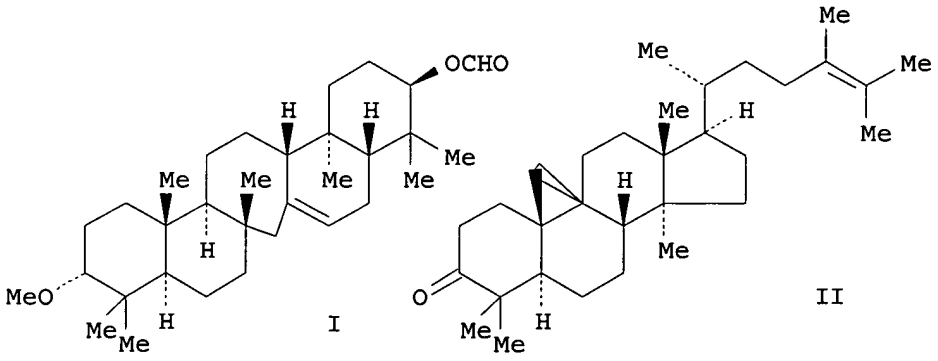
L2 ANSWER 29 OF 100 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2000:829869 CAPLUS
DOCUMENT NUMBER: 134:202415
TITLE: Cancer chemopreventive agents, labdane diterpenoids from the stem bark of Thuja standishii (Gord.) Carr
AUTHOR(S): Tanaka, R.; Ohtsu, H.; Iwamoto, M.; Minami, T.; Tokuda, H.; Nishino, H.; Matsunaga, S.; Yoshitake, A.
CORPORATE SOURCE: Department of Medicinal Chemistry, Osaka University of Pharmaceutical Sciences, Takatsuki, Osaka, 569-1094, Japan

SOURCE: Cancer Letters (Shannon, Ireland) (2000), 161(2), 165-170
CODEN: CALEDQ; ISSN: 0304-3835
PUBLISHER: Elsevier Science Ireland Ltd.
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Seven labdane-type **diterpenoids** from the stem bark of Thuja standishii (Gord.) Carr. (Cupressaceae) and their analogs showed strong inhibitory effects on **Epstein-Barr** virus early antigen (EBV-EA) activation induced by 12-O-tetradecanoylphorbol-13-acetate (TPA). Among these compds., 15,16-bisnor-13-oxolabda-8,11E-dien-19-oic acid was revealed to have the strongest inhibitory effect on the EBV-EA activation, being stronger than that of β-carotene which has been intensively studied in cancer prevention using animal models. 15,16-bisnor-13-Oxolabda-8,11E-dien-19-oic acid was also found to exhibit the excellent antitumor promoting activity in two-stage mouse skin carcinogenesis test using 7,12-dimethylbenz[a]anthracene and TPA.

REFERENCE COUNT: 16 THERE ARE 16 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L2 ANSWER 30 OF 100 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2000:812001 CAPLUS
DOCUMENT NUMBER: 134:83490
TITLE: Bioactive triterpenoids from the stem bark of Picea glehni
AUTHOR(S): Tanaka, Reiko; Kinouchi, Yoshitaka; Tokuda, Harukuni; Nishino, Hoyoku; Matsunaga, Shunyo
CORPORATE SOURCE: Department of Medicinal Chemistry, Osaka University of Pharmaceutical Sciences, Osaka, Japan
SOURCE: Planta Medica (2000), 66(7), 630-634
CODEN: PLMEAA; ISSN: 0032-0943
PUBLISHER: Georg Thieme Verlag
DOCUMENT TYPE: Journal
LANGUAGE: English
GI

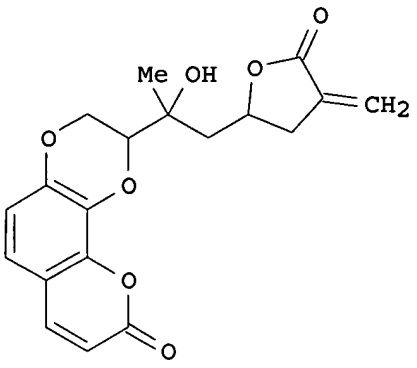


AB Two new **triterpenoids**, 3α-methoxyserrat-14-en-21β-yl formate (I), and 24-methylcycloartenone (II), were isolated from the stem bark of Picea glehni (Fr. Schm.) Masters together with three known **triterpenoids**, 3α-methoxyserrat-14-en-21β-ol, 3β-methoxyserrat-14-en-21β-ol, and piceanonol A. I and II, and a synthetic sample, 3α-methoxyserrat-13-en-21β-yl formate showed potent inhibitory effects on **Epstein-Barr** virus early antigen (EBV-EA) activation induced by the tumor promoter 12-O-tetradecanoylphorbol-13-acetate (TPA).

REFERENCE COUNT: 18 THERE ARE 18 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L2 ANSWER 31 OF 100 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2000:554956 CAPLUS
DOCUMENT NUMBER: 133:278700
TITLE: Ichthyotoxic phloroglucinol derivatives from Dryopteris fragrans and their antitumor promoting activity
AUTHOR(S): Ito, Hideyuki; Muranaka, Takashi; Mori, Kazuko; Jin, Zhe-Xiong; Tokuda, Harukuni; Nishino, Hoyoku; Yoshida, Takashi
CORPORATE SOURCE: Faculty of Pharmaceutical Sciences, Okayama University, Okayama, 700-8530, Japan
SOURCE: Chemical & Pharmaceutical Bulletin (2000), 48(8), 1190-1195
CODEN: CPBTAL; ISSN: 0009-2363
PUBLISHER: Pharmaceutical Society of Japan
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Two new ichthyotoxic compds., aspidin PB and dryofragin, in addition to three known phloroglucinol derivs. and five **terpenoids**, were isolated from the whole herbs of Dryopteris fragrans by toxicity-directed fractionation using Oryzias latipes (Japanese name; medaka). The structures of the new compds. were determined by spectroscopic methods including 2D NMR techniques. Of the isolates aspidin PB, dryofragin and the phloroglucinols aspidin AB and BB and aspidinol, and the **sesquiterpenoids** albicanol and albicanyl acetate exhibited potent ichthyotoxic activity against medaka with a median tolerance limit (TLm after 24 h) of 1.2-4.3 μg/mL. These compds. which are toxic to fish also had a potent inhibitory effect on the activation of **Epstein -Barr** virus early-antigen (EBV-EA) induced by tetradecanoyl phorbol 13-acetate, which is an in vitro short-term assay for antitumor promoting agents. Aspidin BB and albicanol, which exhibited strong inhibitory effects on the EBV-EA activation, significantly suppressed an in vivo two-stage carcinogenesis on mouse skin.
REFERENCE COUNT: 35 THERE ARE 35 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L2 ANSWER 32 OF 100 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2000:514189 CAPLUS
DOCUMENT NUMBER: 133:235138
TITLE: Chemical Constituents of Clausena excavata: Isolation and structure elucidation of novel furanone-coumarins with inhibitory effects for tumor-promotion
AUTHOR(S): Ito, Chihiro; Itoigawa, Masataka; Katsuno, Shinya; Omura, Mitsuo; Tokuda, Harukuni; Nishino, Hoyoku; Furukawa, Hiroshi
CORPORATE SOURCE: Faculty of Pharmacy, Meijo University, Nagoya, 468-8503, Japan
SOURCE: Journal of Natural Products (2000), 63(9), 1218-1224
CODEN: JNPRDF; ISSN: 0163-3864
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English
GI



I

AB A study of the chemical constituents of the leaves of Clausena excavata cultivated in a greenhouse led to the isolation and identification of 10 new furanone-coumarins named clauslactones A (e.g. I), B, C, D, E, F, G, H, I, and J, together with a known carbazole, clauszoline M, and a coumarin, umbelliferone. The new coumarins contain a C10 **terpenoid** side chain with a furanone (γ-lactone) moiety. Further, in clauslactones A-D, the **terpenoid** side chain was shown to be linked to the 7,8-dioxygenated coumarin skeleton through a 1,4-dioxane ring system. This is the first example of coumarins with these structural characteristics in nature. These furanone-coumarins were found to exhibit inhibitory activity against 12-O-tetradecanoylphorbol-13-acetate-induced **Epstein-Barr** virus early antigen activation in Raji cells.

REFERENCE COUNT: 13 THERE ARE 13 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L2 ANSWER 33 OF 100 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2000:488735 CAPLUS
DOCUMENT NUMBER: 133:246796
TITLE: Anti-tumor promoting effects of sesquiterpenes from Maytenus cuzcoina (celastraceae)
AUTHOR(S): Gonzalez, A. G.; Tincusi, B. M.; Bazzocchi, I. L.; Tokuda, H.; Nishino, H.; Konoshima, T.; Jimenez, I. A.; Ravelo, A. G.
CORPORATE SOURCE: Instituto Universitario de Bio-Organica "Antonio Gonzalez", Universidad de La Laguna, Tenerife, Canary Islands, 38206, Spain
SOURCE: Bioorganic & Medicinal Chemistry (2000), 8(7), 1773-1778
CODEN: BMECEP; ISSN: 0968-0896
PUBLISHER: Elsevier Science Ltd.
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Ten **sesquiterpenoids**, with a dihydro-β-agarofuran skeleton, were isolated from Maytenus cuzcoina (Celastraceae). Their structures were elucidated on the basis of spectral anal., including homo- and heteronuclear correlations NMR expts. (COSY, ROESY, HMQC and HMBC), and chemical correlations. The compds. have been tested for their inhibitory effects on **Epstein-Barr** virus early antigen (EBV-EA) activation induced by 12-O-tetradecanoylphorbol-13-acetate (TPA), as a test for potential cancer chemopreventive agents. Some of compds. showed strong inhibitory effects on EBV-EA induction (100% inhibition at 1000 mol ratio/TPA). Their structure-activity relationship is discussed.

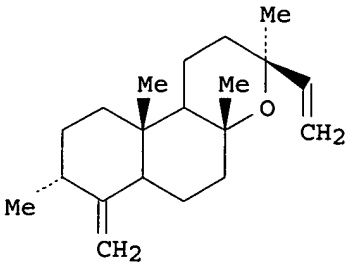
REFERENCE COUNT: 26 THERE ARE 26 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L2 ANSWER 34 OF 100 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2000:431044 CAPLUS

DOCUMENT NUMBER: 133:83607
TITLE: Antitumor-promoting activities of sterols and triterpenoids
AUTHOR(S): Yasmuawa, Ken; Akihisa, Toshihiro
CORPORATE SOURCE: Department of Pharmacy, College of Pharmacy, Nihon University, Narashinodai, Funabashi-shi, Chiba-ken, 274-8555, Japan
SOURCE: Nihon Yukagakkaishi (2000), 49(6), 571-582
CODEN: NIYUFC; ISSN: 1341-8327
PUBLISHER: Nihon Yukagaku Gakkai
DOCUMENT TYPE: Journal; General Review
LANGUAGE: Japanese

AB A review with 88 refs. The eradication of cancer is one of the important research subjects for mankind toward the 21st century. In the course of our research on potent cancer chemopreventive agents from edible plants and fungi, and from crude herbal medicines, we have found that various sterols and triterpene alcs. and their oxygenated derivs. showed activity in in vivo primary screening assay of antitumor promoters by inhibiting the inflammatory ear edema induced by 12-O-tetradecanoylphorbol-13-acetate (TPA) in mice. In this review, we discussed the inhibitory activity of sterols and **triterpenoids** toward TPA-induced inflammatory ear edema, and tumor promotion during two-stage carcinogenesis with 7,12-dimethylbenz[a]anthracene (DMBA) and TPA. This activity was also noted in several other assays on antitumor promoters such as that on the activation of **Epstein-Barr** virus by TPA, and TPA-stimulated Pi incorporation in HeLa cells. Sterols and **triterpenoids** are minor but ubiquitous components in the human diet, and are considered to be non-toxic. These compds. may possibly prove useful for producing cancer chemopreventive agents.

L2 ANSWER 35 OF 100 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2000:321849 CAPLUS
DOCUMENT NUMBER: 133:86705
TITLE: Potential antitumor-promoting diterpenoids from the stem bark of Picea glehni
AUTHOR(S): Kinouchi, Yoshitaka; Matsunaga, Shunyo; Tokuda, Harukuni; Nishino, Hoyoku; Tanaka, Reiko
CORPORATE SOURCE: Department of Medicinal Chemistry, Osaka University of Pharmaceutical Sciences, Osaka, 569-1094, Japan
SOURCE: Journal of Natural Products (2000), 63(6), 817-820
CODEN: JNPRDF; ISSN: 0163-3864
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English
GI



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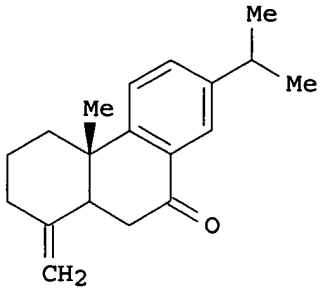
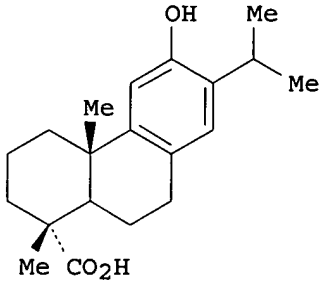


II



III

AB A novel rearranged labdane-type **diterpenoid**, 19(4→3)abeo-8α,13(S)-epoxylabda-4(18),14-diene (I), and two new abietane-type **diterpenoids**, 19-nor-abieta-4(18),8,11,13-tetraen-7-one (II) and 12-hydroxydehydroabietic acid (III) were isolated from the stem bark of Picea glehni, together with seven known **diterpenoids**-13-epimanoyl oxide, dehydroabietic acid (IV), (11E)-14,15-bisnor-8α-hydroxy-11-labden-13-one (V), abieta-8,11,13-trien-7-one (VI), 9α,13α-epidioxyabiet-8(14)-en-18-oic acid (VII), 9,10α-epoxy-9,10-seco-abieta-8,11,13-trien-18-oic acid, and Me 15-hydroxy-7-oxo-dehydroabietate (VIII). Compds. IV-VIII showed potent inhibitory effects on **Epstein-Barr** virus early antigen (EBV-EA) activation induced by the tumor promoter 12-O-tetradecanoylphorbol 13-acetate.

REFERENCE COUNT: 17 THERE ARE 17 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

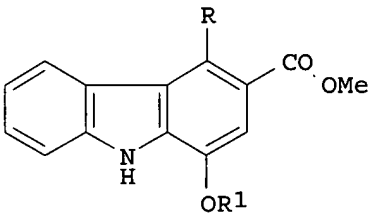
L2 ANSWER 36 OF 100 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1999:799978 CAPLUS
DOCUMENT NUMBER: 132:134799
TITLE: Bioactive Steroids from the Whole Herb of Euphorbia chamaesyce
AUTHOR(S): Tanaka, Reiko; Kasubuchi, Kazuaki; Kita, Shunji; Tokuda, Harukuni; Nishino, Hoyoku; Matsunaga, Shunyo
CORPORATE SOURCE: Department of Medicinal Chemistry, Osaka University of Pharmaceutical Sciences, Takatsuki Osaka, 569-1094, Japan
SOURCE: Journal of Natural Products (2000), 63(1), 99-103
CODEN: JNPRDF; ISSN: 0163-3864
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Three new ergostane-type steroids, 3β-hydroxy-4α,14α-dimethyl-5α-ergosta-8,24(28)-dien-11-one, 3β,11α-dihydroxy-4α,14α-dimethyl-5α-ergosta-8,24(28)-dien-7-one, and 3β,7α-dihydroxy-4α,14α-dimethyl-5α-ergosta-8,24(28)-dien-11-one, were isolated, together with two known **triterpenoids**, wrightial and lup-20(30)-ene-3β,29-diol from the whole herb of Euphorbia chamaesyce. The third steroid Compound showed a potent inhibitory effect on **Epstein-Barr** virus early antigen activation induced by the tumor promoter 12-O-tetradecanoylphorbol

13-acetate (TPA).
REFERENCE COUNT: 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L2 ANSWER 37 OF 100 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1999:770622 CAPLUS
DOCUMENT NUMBER: 132:119889
TITLE: New Carbazole Alkaloids from Clausena anisata with Antitumor Promoting Activity
AUTHOR(S): Ito, Chihiro; Katsuno, Shinya; Itoigawa, Masataka; Ruangrungsi, Nijsiri; Mukainaka, Teruo; Okuda, Masato; Kitagawa, Yutaka; Tokuda, Harukuni; Nishino, Hoyoku; Furukawa, Hiroshi
CORPORATE SOURCE: Faculty of Pharmacy, Meijo University, Tempaku Nagoya, 468-8503, Japan
SOURCE: Journal of Natural Products (2000), 63(1), 125-128
CODEN: JNPRDF; ISSN: 0163-3864
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English
GI



I

AB Four new carbazole alkaloids, clausamines D, E, F, and G I [R = Me2C:CHCH2, R1 = Me; R = (E)-Me2C(OH)CH:CH, R1 = Me; R = (E)-Me2C(OH)CH:CH, R1 = H; R = (E)-Me2C(OOH)CH:CH, R1 = Me, resp.], were isolated from Clausena anisata as inhibitors of Epstein-Barr virus early antigen activation induced by 12-O-tetradecanoylphorbol-13-acetate in Raji cells.
REFERENCE COUNT: 14 THERE ARE 14 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L2 ANSWER 38 OF 100 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1999:399063 CAPLUS
DOCUMENT NUMBER: 131:153533
TITLE: Anti-carcinogenic activity of Taraxacum plant. II
AUTHOR(S): Takasaki, Midori; Konoshima, Takao; Tokuda, Harukuni; Masuda, Kazuo; Arai, Yoko; Shiojima, Kenji; Ageta, Hiroyuki
CORPORATE SOURCE: Kyoto Pharmaceutical University, Kyoto, 607-8414, Japan
SOURCE: Biological & Pharmaceutical Bulletin (1999), 22(6), 606-610
CODEN: BPBLEO; ISSN: 0918-6158
PUBLISHER: Pharmaceutical Society of Japan
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Eleven **triterpenoids** (I-XI) from the roots of Taraxacum japonicum (Compositae) were examined for their inhibitory effects on **Epstein-Barr** virus early antigen (EBV-EA) induced by the tumor promoter, 12-O-tetradecanoylphorbol-13-acetate (TPA), in Raji cells as a primary screening test for anti-tumor-promoters (cancer chemopreventive agents). Of these **triterpenoids**, taraxasterol I

and taraxerol VII exhibited significant inhibitory effects on EBV-EA induction, but the inhibitory effects of their acetates II and VIII were weaker than those of I and VII. Furthermore, I and VII exhibited potent anti-tumor-promoting activity in the two-stage carcinogenesis tests of mouse skin using 7,12-dimethylbenz[a]anthracene (DMBA) as an initiator and TPA as a promoter, and I showed a remarkable inhibitory effect on mouse spontaneous mammary tumors using C3H/OuJ mouse. These results strongly suggested that taraxasterol could be a valuable chemopreventive agent.

REFERENCE COUNT: 21 THERE ARE 21 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L2 ANSWER 39 OF 100 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1997:423692 CAPLUS

DOCUMENT NUMBER: 127:173813

TITLE: Triterpenoid inhibitors of interleukin-1 secretion and tumor-promotion from Tripterygium wilfordii var. regelii

AUTHOR(S): Takaishi, Yoshihisa; Wariishi, Noriko; Tateishi, Hideo; Kawazoe, Kazuyoshi; Nakano, Kimiko; Ono, Yukihisa; Tokuda, Haruyuki; Nishino, Hoyoku; Iwashima, Akio

CORPORATE SOURCE: Faculty of Pharmaceutical Sciences, University of Tokushima, Tokushima, 770, Japan

SOURCE: Phytochemistry (1997), 45(5), 969-974
CODEN: PYTCAS; ISSN: 0031-9422

PUBLISHER: Elsevier

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Three new **triterpenoids**, 2,3,22β-trihydroxy-21-oxo-24,29-nor-D:A-friedooleana-1,3,5(10)-triene, 2α,6β-dihydroxy-3-oxo-24-nor-D:A-friedooleana-4-ene-29-oic acid and 2,3,7-trihydroxy-6-oxo-24-nor-D:A-friedooleana-1,3,5(10),7-tetraene-29-oic acid, named rheol A, B and C, and nine known **triterpenoids** were isolated from T. wilfordii var. regelii. Their structures were established on the basis of the chemical reactions and spectroscopic evidence. Isolated compds. and derivs. were observed to inhibit **Epstein-Barr** virus early antigen activation and showed potent inhibitory activities against interleukin-1α and β release from human peripheral mononuclear cells.

REFERENCE COUNT: 23 THERE ARE 23 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

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L2          100 S ?TERPENOID? (P) EPSTEIN BARR
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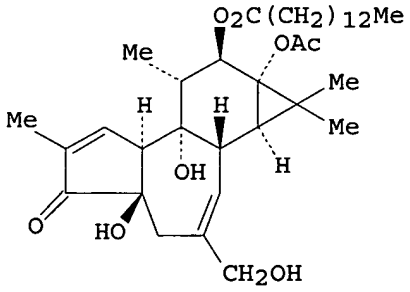
L4 ANSWER 3 OF 6 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1983:401608 CAPLUS
DOCUMENT NUMBER: 99:1608
TITLE: Inhibition of 12-O-tetradecanoylphorbol-13-acetate-induced induction in **Epstein-Barr** virus early antigen in Raji cells
AUTHOR(S): Okamoto, Hitoshi; Yoshida, Daisuke; Mizusaki, Shigenobu
CORPORATE SOURCE: Cent. Res. Inst., Japan Tob. and Salt Public Corp., Yokohama, 227, Japan
SOURCE: Cancer Letters (Shannon, Ireland) (1983), 19(1), 47-53
CODEN: CALEDQ; ISSN: 0304-3835
DOCUMENT TYPE: Journal
LANGUAGE: English
GI



I

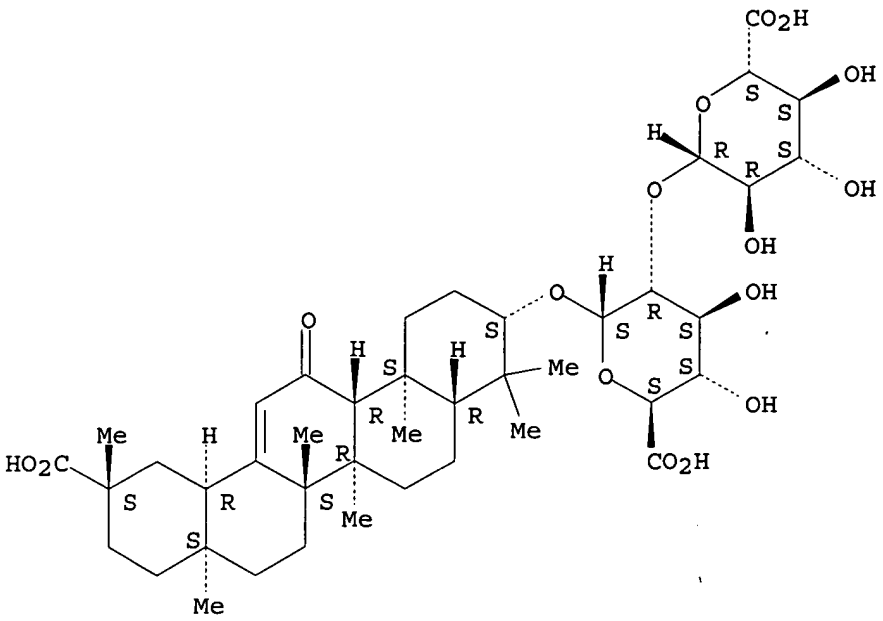
AB Retinol [68-26-8], 5 flavonoids, 3 steroids, and 7 sweetening agents were studied for their effects on TPA (I) [16561-29-8]-induced early antigen (EA) of **Epstein-Barr** virus (EBV) in Raji cells. Concomitant treatment of Raji cells with TPA and retinol inhibited EA induction. Among flavonoids, quercetin [117-39-5] resulted in effective inhibition of EA induction by TPA and α-naphthoflavone [604-59-1] showed a weakly inhibitory effect. None of the other flavonoids such as rutin [153-18-4], catechin [154-23-4] and β-naphthoflavone [6051-87-2] affected the induction of EBV-EA by TPA. β-Estradiol [50-28-2] obviously inhibited EBV-EA induction by TPA, but hydrocortisone [50-23-7] did not show any inhibitory effect. Glycyrrhetinic acid, steviol, phyllodulcin and perrillartine also strongly inhibited EBV-EA induction. Glycyrrhizin [**1405-86-3**] and stevioside [57817-89-7], glycosides of glycyrrhetinic acid [471-53-4] and steviol [471-80-7], did not inhibit the induction of EBV-EA by TPA. Some of these inhibitors may be effective in inhibiting the in vivo tumor promotion by TPA.

IT **1405-86-3**
RL: BIOL (Biological study)
(TPA-induced **Epstein-Barr** virus early antigen in Raji cells response to)

RN 1405-86-3 CAPLUS

CN α-D-Glucopyranosiduronic acid, (3β,20β)-20-carboxy-11-oxo-30-norolean-12-en-3-yl 2-O-β-D-glucopyranuronosyl- (9CI) (CA INDEX NAME)

Absolute stereochemistry.


CO2H
OH
OH
OH
H
O
O
O
O
H
OH
OH
CO2H
O
H
H
Me
Me
Me
Me
Me
HO2C
Me
H
Me
Me

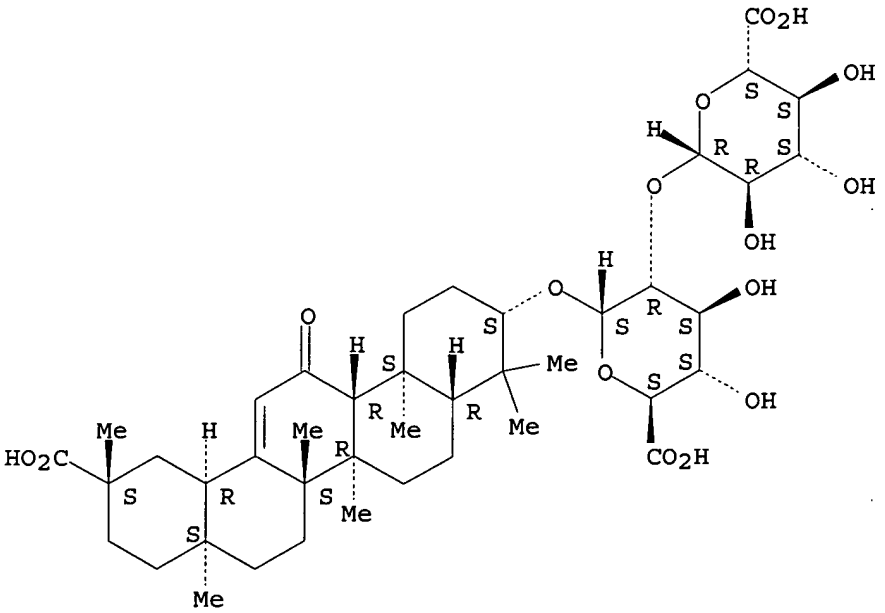
L4 ANSWER 1 OF 6 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2003:499243 CAPLUS
DOCUMENT NUMBER: 139:374307
TITLE: Mechanism of action of glycyrrhizic acid in inhibition of **Epstein-Barr** virus replication in vitro
AUTHOR(S): Lin, Jung-Chung
CORPORATE SOURCE: College of Medicine, Department of Microbiology, Tzu Chi University, Hualien, 970, Taiwan
SOURCE: Antiviral Research (2003), 59(1), 41-47
CODEN: ARSRDR; ISSN: 0166-3542
PUBLISHER: Elsevier Science B.V.
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The authors report here that glycyrrhizic acid (GL), a component of licorice root (Glycyrrhiza radix), is active against EBV replication in superinfected Raji cells in a dose-dependent fashion. The IC50 values for viral inhibition and cell growth were 0.04 and 4.8 mM, resp. The selectivity index (ratio of IC50 for cell growth to IC50 for viral DNA synthesis) was 120. Time of addition expts. suggested that GL interferes with an early step of the EBV replication cycle (possibly penetration). GL had no effect on viral adsorption nor did it inactivate EBV particles. Thus, GL represents a new class of anti-EBV compds. with a mode of action different from that of the nucleoside analogs that inhibit viral DNA polymerase.

IT **1405-86-3**, Glycyrrhizic acid
RL: DMA (Drug mechanism of action); PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(mechanism of glycyrrhizic acid in inhibition of **Epstein-Barr** virus replication in vitro)

RN 1405-86-3 CAPLUS
CN α-D-Glucopyranosiduronic acid, (3β,20β)-20-carboxy-11-oxo-30-norolean-12-en-3-yl 2-O-β-D-glucopyranuronosyl- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



REFERENCE COUNT: 33 THERE ARE 33 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

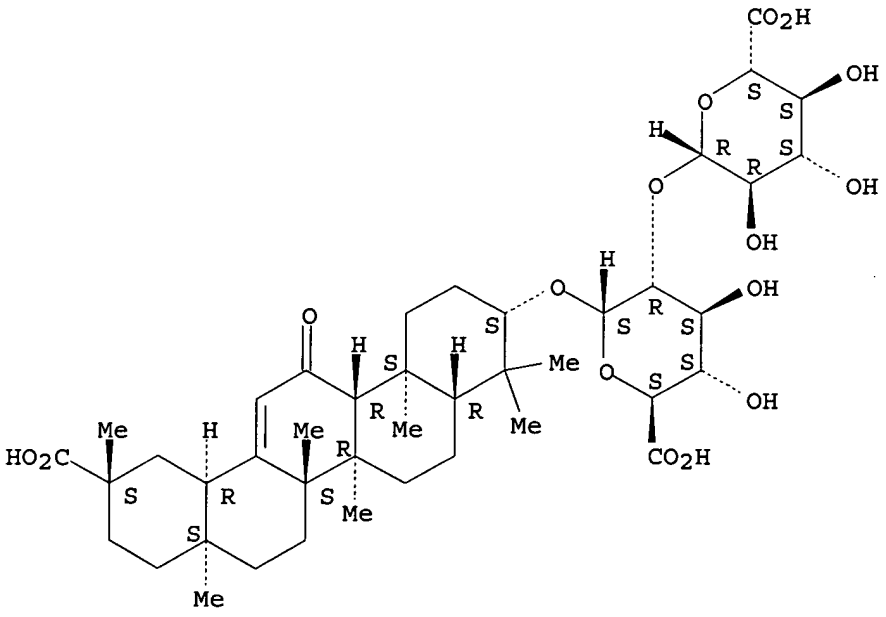
L4 ANSWER 2 OF 6 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1998:763541 CAPLUS
DOCUMENT NUMBER: 130:172862
TITLE: **Epstein-Barr** virus DNA polymerase inhibitors from Chinese herbs: use of preliminary screening, physicochemical properties and taxonomy for new lead compounds generation
AUTHOR(S): Lien, Eric J.; Bui, Huynh-Hoa; Ren, Shijun; Liu, Karin C. S. Chen; Lin, Mei-Tsu; Chiou, Juo-Farn
CORPORATE SOURCE: Department of Pharmaceutical Sciences, School of Pharmacy, University of Southern California, Los Angeles, CA, 90033, USA
SOURCE: Chinese Pharmaceutical Journal (Taipei) (1998), 50(4), 233-247
CODEN: CPHJEP; ISSN: 1016-1015
PUBLISHER: Pharmaceutical Society of Republic of China
DOCUMENT TYPE: Journal
LANGUAGE: English

AB A paradigm of combining preliminary screening data, SAR, functional group and taxonomical analyses has been proposed for new lead compds. generation. Based on the screening data of 38 natural products, a quaternary ammonium derivative (coptisine chloride), a sesquiterpene with an α,β-unsatd. lactone function and an isoflavonoid (daidzein) have been found to be most active. Based on the analyses of overall structures, physicochem. properties and taxonomical relationships, 47 related compds. and six families of plants are suggested for further investigation. Due to the inherent biodiversity, nature may still be the best source for new drug discovery.

IT **1405-86-3**, Glycyrrhizic acid
RL: BAC (Biological activity or effector, except adverse); BOC (Biological occurrence); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); OCCU (Occurrence); USES (Uses)
(**Epstein-Barr** virus DNA polymerase inhibitors from Chinese herbs)

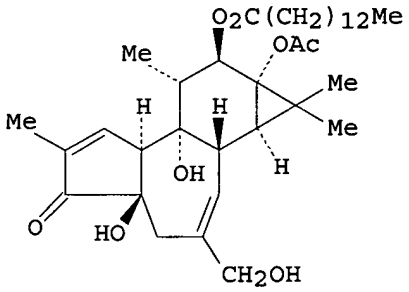
RN 1405-86-3 CAPLUS
CN α-D-Glucopyranosiduronic acid, (3β,20β)-20-carboxy-11-oxo-30-norolean-12-en-3-yl 2-O-β-D-glucopyranuronosyl- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



REFERENCE COUNT: 11 THERE ARE 11 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 3 OF 6 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1983:401608 CAPLUS
DOCUMENT NUMBER: 99:1608
TITLE: Inhibition of 12-O-tetradecanoylphorbol-13-acetate-induced induction in **Epstein-Barr** virus early antigen in Raji cells
AUTHOR(S): Okamoto, Hitoshi; Yoshida, Daisuke; Mizusaki, Shigenobu
CORPORATE SOURCE: Cent. Res. Inst., Japan Tob. and Salt Public Corp., Yokohama, 227, Japan
SOURCE: Cancer Letters (Shannon, Ireland) (1983), 19(1), 47-53
CODEN: CALEDQ; ISSN: 0304-3835
DOCUMENT TYPE: Journal
LANGUAGE: English
GI



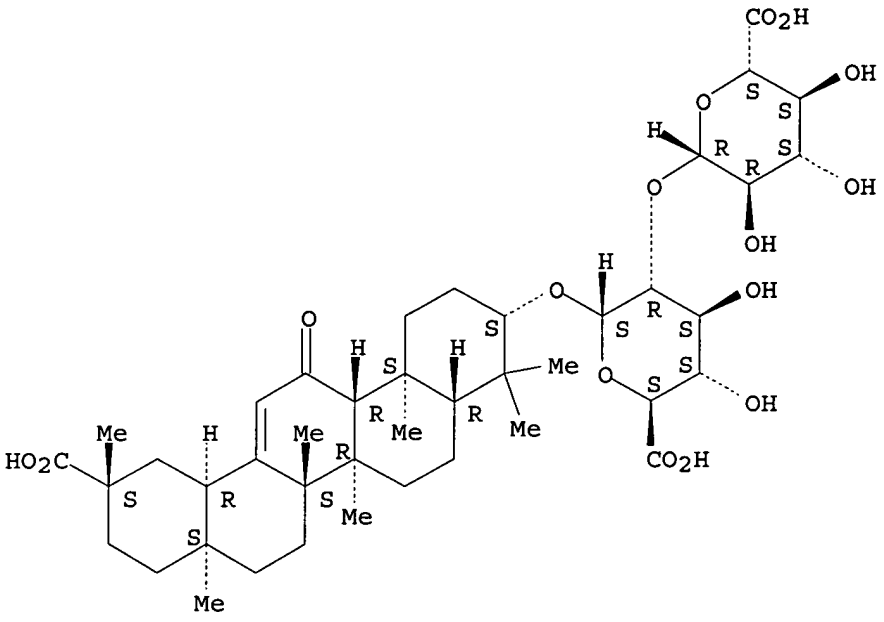
I

AB Retinol [68-26-8], 5 flavonoids, 3 steroids, and 7 sweetening agents were studied for their effects on TPA (I) [16561-29-8]-induced early antigen (EA) of **Epstein-Barr** virus (EBV) in Raji cells. Concomitant treatment of Raji cells with TPA and retinol inhibited EA induction. Among flavonoids, quercetin [117-39-5] resulted in effective inhibition of EA induction by TPA and α-naphthoflavone [604-59-1] showed a weakly inhibitory effect. None of the other flavonoids such as rutin [153-18-4], catechin [154-23-4] and β-naphthoflavone [6051-87-2] affected the induction of EBV-EA by TPA. β-Estradiol [50-28-2] obviously inhibited EBV-EA induction by TPA, but hydrocortisone [50-23-7] did not show any inhibitory effect. Glycyrrhetinic acid, steviol, phyllodulcin and perrillartine also strongly inhibited EBV-EA induction. Glycyrrhizin [**1405-86-3**] and stevioside [57817-89-7], glycosides of glycyrrhetinic acid [471-53-4] and steviol [471-80-7], did not inhibit the induction of EBV-EA by TPA. Some of these inhibitors may be effective in inhibiting the in vivo tumor promotion by TPA.

IT **1405-86-3**
RL: BIOL (Biological study)
(TPA-induced **Epstein-Barr** virus early antigen in Raji cells response to)

RN 1405-86-3 CAPLUS
CN α-D-Glucopyranosiduronic acid, (3β,20β)-20-carboxy-11-oxo-30-norolean-12-en-3-yl 2-O-β-D-glucopyranuronosyl- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L4 ANSWER 4 OF 6 MEDLINE on STN
ACCESSION NUMBER: 2005132955 MEDLINE
DOCUMENT NUMBER: PubMed ID: 15765143
TITLE: Licking latency with licorice.
AUTHOR: Cohen Jeffrey I
CORPORATE SOURCE: Medical Virology Section, Laboratory of Clinical Infectious Diseases, NIH, Bethesda, Maryland 20892, USA.. jcohen@niaid.nih.gov
SOURCE: The Journal of clinical investigation, (2005 Mar) Vol. 115, No. 3, pp. 591-3.
Journal code: 7802877. ISSN: 0021-9738.
PUB. COUNTRY: United States
DOCUMENT TYPE: Commentary
Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Abridged Index Medicus Journals; Priority Journals
ENTRY MONTH: 200505
ENTRY DATE: Entered STN: 20050315
Last Updated on STN: 20050510
Entered Medline: 20050509

AB Numerous viruses cause latent infections in humans, and reactivation often results in pain and suffering. While vaccines for several of these viruses are available or currently being studied in clinical trials, and antiviral therapies have been successful in preventing or treating active infection, therapy to eradicate latent infection has lagged behind. A new study reported in this issue of the JCI shows that treatment of cells latently infected with Kaposi sarcoma-associated herpesvirus (KSHV) with glycyrrhizic acid, a component of licorice, reduces synthesis of a viral latency protein and induces apoptosis of infected cells. This finding suggests a novel way to interrupt latency.

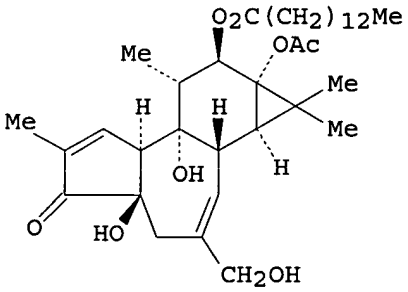
L4 ANSWER 5 OF 6 MEDLINE on STN
ACCESSION NUMBER: 2003306618 MEDLINE
DOCUMENT NUMBER: PubMed ID: 12834859
TITLE: Mechanism of action of glycyrrhizic acid in inhibition of **Epstein-Barr** virus replication in vitro.
AUTHOR: Lin Jung Chung
CORPORATE SOURCE: Department of Microbiology, College of Medicine, Tzu Chi University, 701 Section 3, Chung Yang Road, Hualien 970,

Taiwan ROC.. jx18@mail.tcu.edu.tw
SOURCE: Antiviral research, (2003 Jun) Vol. 59, No. 1, pp. 41-7.
Journal code: 8109699. ISSN: 0166-3542.
PUB. COUNTRY: Netherlands
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200310
ENTRY DATE: Entered STN: 20030702
Last Updated on STN: 20031024
Entered Medline: 20031023

AB We report here that glycyrrhizic acid (GL), a component of licorice root (Glycyrrhiza radix), is active against EBV replication in superinfected Raji cells in a dose-dependent fashion. The IC(50) values for viral inhibition and cell growth were 0.04 and 4.8mM, respectively. The selectivity index (ratio of IC(50) for cell growth to IC(50) for viral DNA synthesis) was 120. Time of addition experiments suggested that GL interferes with an early step of EBV replication cycle (possibly penetration). GL had no effect on viral adsorption, nor did it inactivate EBV particles. Thus, GL represents a new class of anti-EBV compounds with a mode of action different from that of the nucleoside analogs that inhibit viral DNA polymerase.

L4 ANSWER 6 OF 6 MEDLINE on STN
ACCESSION NUMBER: 96186542 MEDLINE
DOCUMENT NUMBER: PubMed ID: 8606838
TITLE: The reversal of **Epstein Barr** virus induced hepatosplenomegaly in 24 hours with inhibitors of xanthine oxidase and nitric oxide synthase.
AUTHOR: Flavin-Koenig D F
SOURCE: The New Zealand medical journal, (1996 Mar 22) Vol. 109, No. 1018, pp. 106-7.
Journal code: 0401067. ISSN: 0028-8446.
PUB. COUNTRY: New Zealand
DOCUMENT TYPE: (CASE REPORTS)
Letter
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199605
ENTRY DATE: Entered STN: 19960531
Last Updated on STN: 19980206
Entered Medline: 19960517

L6 ANSWER 1 OF 3 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1983:401608 CAPLUS
DOCUMENT NUMBER: 99:1608
TITLE: Inhibition of 12-O-tetradecanoylphorbol-13-acetate-induced induction in **Epstein-Barr** virus early antigen in Raji cells
AUTHOR(S): Okamoto, Hitoshi; Yoshida, Daisuke; Mizusaki, Shigenobu
CORPORATE SOURCE: Cent. Res. Inst., Japan Tob. and Salt Public Corp., Yokohama, 227, Japan
SOURCE: Cancer Letters (Shannon, Ireland) (1983), 19(1), 47-53
CODEN: CALEDQ; ISSN: 0304-3835
DOCUMENT TYPE: Journal
LANGUAGE: English
GI



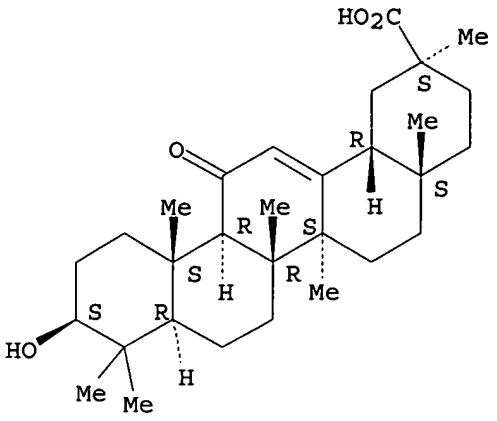
I

AB Retinol [68-26-8], 5 flavonoids, 3 steroids, and 7 sweetening agents were studied for their effects on TPA (I) [16561-29-8]-induced early antigen (EA) of **Epstein-Barr** virus (EBV) in Raji cells. Concomitant treatment of Raji cells with TPA and retinol inhibited EA induction. Among flavonoids, quercetin [117-39-5] resulted in effective inhibition of EA induction by TPA and α-naphthoflavone [604-59-1] showed a weakly inhibitory effect. None of the other flavonoids such as rutin [153-18-4], catechin [154-23-4] and β-naphthoflavone [6051-87-2] affected the induction of EBV-EA by TPA. β-Estradiol [50-28-2] obviously inhibited EBV-EA induction by TPA, but hydrocortisone [50-23-7] did not show any inhibitory effect. Glycyrrhetinic acid, steviol, phyllodulcin and perrillartine also strongly inhibited EBV-EA induction. Glycyrrhizin [1405-86-3] and stevioside [57817-89-7], glycosides of glycyrrhetinic acid [**471-53-4**] and steviol [471-80-7], did not inhibit the induction of EBV-EA by TPA. Some of these inhibitors may be effective in inhibiting the in vivo tumor promotion by TPA.

IT **471-53-4**
RL: BIOL (Biological study)
(TPA-induced **Epstein-Barr** virus early antigen in Raji cells response to)

RN 471-53-4 CAPLUS
CN Olean-12-en-29-oic acid, 3-hydroxy-11-oxo-, (3β,20β)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L6 ANSWER 2 OF 3 MEDLINE on STN
ACCESSION NUMBER: 2003128681 MEDLINE
DOCUMENT NUMBER: PubMed ID: 12608850
TITLE: Polyprenylated benzophenones from Garcinia assigu and their potential cancer chemopreventive activities.
AUTHOR: Ito Chihiro; Itoigawa Masataka; Miyamoto Yoshiaki; Onoda Saori; Rao K Sundar; Mukainaka Teruo; Tokuda Harukuni; Nishino Hoyoku; Furukawa Hiroshi
CORPORATE SOURCE: Faculty of Pharmacy, Meijo University, Tempaku, Nagoya 468-8503, Japan.. itoigawa@tokaigakuen-u.ac.jp
CONTRACT NUMBER: CA 17625 (NCI)
SOURCE: Journal of natural products, (2003 Feb) Vol. 66, No. 2, pp. 206-9.
Journal code: 7906882. ISSN: 0163-3864.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200307
ENTRY DATE: Entered STN: 20030320
Last Updated on STN: 20030708
Entered Medline: 20030707

AB In a further study on the chemical constituents of Garcinia assigu, two new benzophenones corresponding to the 13-O-methyl ethers (1 and 2) of the known isogarcinol and garcinol, respectively, were isolated and characterized, along with known benzophenones (3-6). Inhibitory effects of the benzophenones isolated from this plant on **Epstein-Barr** virus early antigen (EBV-EA) activation induced by 12-O-tetradecanoylphorbol-13-acetate (TPA) in Raji cells and their radical-scavenging ability against 1,1-diphenyl-2-picrylhydrazyl (DPPH) were demonstrated. The cyclized polyprenylbenzophenones (1-5) showed comparable or stronger potential cancer chemopreventive activity when compared to glycyrrhetic acid, a known anti-tumor promoter.

L6 ANSWER 3 OF 3 MEDLINE on STN
ACCESSION NUMBER: 96186542 MEDLINE
DOCUMENT NUMBER: PubMed ID: 8606838
TITLE: The reversal of **Epstein Barr** virus induced hepatosplenomegaly in 24 hours with inhibitors of xanthine oxidase and nitric oxide synthase.
AUTHOR: Flavin-Koenig D F
SOURCE: The New Zealand medical journal, (1996 Mar 22) Vol. 109, No. 1018, pp. 106-7.
Journal code: 0401067. ISSN: 0028-8446.
PUB. COUNTRY: New Zealand
DOCUMENT TYPE: (CASE REPORTS)

	Letter
LANGUAGE:	English
FILE SEGMENT:	Priority Journals
ENTRY MONTH:	199605
ENTRY DATE:	Entered STN: 19960531
	Last Updated on STN: 19980206
	Entered Medline: 19960517

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               E GLYCYRRHIZIC ACID/CN
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               E GLYCYRRHETINIC ACID/CN
L2           1 S E3

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L4           6 S L3 AND EPSTEIN BARR
L5        2506 S L2
L6           3 S L5 AND EPSTEIN BARR
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               E GLYCYRRHIZIC/CN
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L1           1 S E3
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     FILE 'CAPLUS, MEDLINE' ENTERED AT 17:02:32 ON 19 APR 2006
L3        3188 S L1
L4           6 S L3 AND EPSTEIN BARR
L5        2506 S L2
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